

schoolstechOZ

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FIRBANK GRAMMAR SCHOOL

NOTES TO ACCOMPANY PRESENTATIONS

PROFESSOR MICHAEL HOUGH

ABSTRACTS

SEMINAR 1:- NEW TECHNOLOGIES, THE GROWTH OF ASIAN ECONOMIES AND IMPLICATIONS FOR SCHOOLING AND EDUCATORS

This seminar will provide participants with an update on the main 'new knowledge technologies' that are driving change in modern economies, and although the review will concentrate on current developments in I.C.T. based technologies, it will also extend to other knowledge based 'drivers' of change such as genetic engineering and nanotechnologies. In every case mentioned, the perceived implications for schooling and educators will be made wherever possible

The challenges of the developing Asian economies such as PRC (China) and India will also be reviewed- particularly but not only with reference to more obvious educational issues such as the schooling and schooling practice issues and implications from a global review of PISA results- but on the wider socio-political pressures emanating from demographic profiles of ageing vs younger economies, population and mass movements of e.g. refugees and water and land usage based pressures

This seminar would be particularly useful for those who are concerned with strategic futures of educational organisations and systems, and those wanting to keep up to date with more theoretical understandings of the challenges and opportunities facing the Australian economy and its education systems

THE BROADER CONTEXTS FOR UNDERSTANDING

The Australian Context

All of us are operating our Schools and learning organisations within the context of a modern Australian society that is undergoing many stresses and changes. I have deliberately selected some of the more relevant ones that impinge on public sector / service and / or volunteer organisations:-

- We live in a country that has coped extremely well in the Global Financial Crisis, and our standard of living is higher than at any time in our history, BUT we are entering a period of financial instability, caution and savings, at a time when our 'resources boom' is finally in decline e.g. coal and iron ore export revenues
- We are living longer and having much longer periods of retirement whilst still in good health, compared to our own parents and grandparents

- We are as a community all aware of our 'rights' but very reluctant to accept our 'responsibilities' that accompany those rights. This has occurred in an era of risk avoidance and increasing use of lawyers, litigation and the courts as a way of redressing perceived or actual 'wrongs'
- There is a growing viewpoint that somehow life can be made a risk free event and in any case risk is somehow evil and unacceptable and avoidable. We practice risk avoidance rather than risk management
- Human services such as Health Services and Schooling are under much greater scrutiny from parents and the community, as described in much greater detail in the PPT presentation
- Many of our community service / NFP type organisations are increasingly dependent on an 'ageing' population, and are not attracting younger generations as members
- Because of this ageing population and reduced birth rates, we have a significantly reduced tax base and an increasing inability to fund our traditional services such as education and health totally through our tax system. Consequently we are denying younger generations the 'free' education and health services the older generations enjoyed themselves
- We have a large cohort of vocal and influential 'baby boomers' retiring/ about to retire, without adequate savings but a high expectation of preserving a lifestyle
- Our younger generations are very idealistic and concerned about environment, global warming and 'causes'
- We are good volunteers for specific causes but no longer good 'joiners of organisations'
- We expect the "Government" to rescue or fund many activities and organisations that we regard as worthwhile, but as we do not pay high levels of tax by world standards, our Governments are resource poor, and increasingly are looking for less costly ways of providing services, and/or cutting back on number and amounts of actual grants given OR relying on public –private partnerships to provide services.
- One accompanying characteristic is that if (or when) we get Government or other funding assistance we often resent or rebuff the ACCOUNTABILITY and REPORTING requirements that come with it.
- We are (perhaps surprisingly) ACCEPTIVE OF MAJOR CHANGE such as the Loss of Car Manufacturing from Australia / The possible purchase of major warships (Submarines) from overseas rather than building them in Australia.

The Global Context:- SOCIETAL CHANGE ACROSS ERAS Table 1

LABOUR (V1)/CAPITAL (V2)/KNOWLEDGE (V3) INTENSIVE ORGANISATIONS

(THIS TABLE ILLUSTRATES HOW CHANGING SOCIO-ECONOMIC ERAS CREATE DIFFERENT CHOICES)

Note:-The Key Factors summarizing different aspects of societal change are presented in the Vertical axis, and the choices created by different socio-economic eras are provided horizontally for each factor.

	KEY FACTOR (S) AND THE SPECTRUM OF SOCIETAL CHANGE		
	FROM	THROUGH	TO
	AGRARIAN ERA (V1)	MANUFACTURING ERA (V2)	INFORMATION / SERVICE ERA (V3)
FACTOR	↓ V1	↓ V2	↓ V3
STATUS OF WORK-FORCE	Low Expectations of Worker(s) Low Education Levels Low Training Investment Low Labour Costs	Emergence of Skilled/Professional Classes →	High Expectations of Worker(s) High Education Levels High Training Investment High Labour Costs
STATUS OF CAPITAL	Small Size of Investment 'Pool' Capital held by elite few	Development of Capitalism →	Large, Global Investment 'Pool' Capital held through formal, identifiable structures
ATTITUDE OF GOVERNMENT	Poorly developed Government structures Focus on a few key functions eg. Defence, Treasury Non sophisticated Government measures	→ Restricted ownership Government domination Protected markets (tariffs, quotas) Simple regulatory systems	→ Open ownership Transparent Government frameworks Global markets Sophisticated Regulatory systems

SCOOOLSTECHOZ Notes to Accompany M. Hough Presentation 1

<p>MANAGEMENT MEASURES</p>	<p>Simple Relationships, Often not Formalised Into Organisations</p> <p>Low Levels of Need For Formal Management, Management Theory or Management Training (except for Church or Army)</p>	<p>→ Authoritarian</p> <p>Downward Imposed Rules</p> <p>Hierarchical Structures</p> <p>Quality by Inspection</p> <p>Low levels of freedom/choice for workforce</p> <p>Responsibility directed upwards</p> <p>Quality as defined by Supervisors</p>	<p>→ Shared Authority</p> <p>Rules developed by agreement</p> <p>'Flat' Structures</p> <p>Total Quality for all activities</p> <p>High levels of freedom/choice for workforce</p> <p>Responsibility vested with those who need to make the decision</p> <p>Quality for customer(s) specifications</p>
<p>PURPOSE AND STYLE OF SUPERVISION</p>	<p>Poorly developed concept</p> <p>Only required in narrow usage areas (eg. specific skill development for relatively simple, usually physical tasks. E.g. craft guilds)</p>	<p>→ Supervision emerged as a body of knowledge to gain more effective performance from persons performing skilled, often cognitive tasks, in a hierarchical environment</p>	<p>→ Concept of supervision radically changed</p> <p>Team or self direction, with supervision as a supportive coaching function, in non hierarchical environments</p>
<p>PROBABLE BASIS OF POWER</p>	<p>[Force - Physical or Religious]</p>	<p>→ [Wealth/Capital]</p>	<p>→ [Knowledge/Information]</p>
<p>STYLE OF ORGANISATION</p>	<p>[Labour Intensive]</p>	<p>→ [Capital Intensive]</p>	<p>→ [Knowledge Intensive]</p>
<p>LIKELY STRUCTURE (S) OF ORG'N</p>	<p>SIMPLE</p> <p>HIERARCHICAL</p> <p>DIVISIONAL</p>	<p>BUREAUCRATIC</p> <p>DIVISIONAL</p>	<p>MATRIX</p> <p>FLEXIBLE</p>
<p>LIKELY BASIS OF CHANGE STRATEGY</p>	<p>POWER COERCIVE</p> <p>(P-C)</p>	<p>EMPIRICAL RATIONAL</p> <p>(E-R)</p>	<p>NORMATIVE</p> <p>RE-EDUCATIVE</p> <p>n-r)</p>
<p>LIKELY BASES OF MANAGING PEOPLE</p>	<p>THEORY X BASED</p> <p>DIRECTIVE BASED</p> <p>FEW RULES</p> <p>CLEAR OUTCOMES</p>	<p>THEORY X AND THEORY Y COMPETE</p> <p>LEADERSHIP BASED</p> <p>MANY RULES AND PROCEEDURES EVOLVED</p>	<p>THEORY Y PREVAILS</p> <p>CUSTOMER FOCUS BASED</p> <p>FEWER RULES</p> <p>VALUES AND ETHICS DRIVEN</p>

SCOOLETECHHOZ Notes to Accompany M. Hough Presentation 1

STATUS AND ROLE OF SCHOOLS	Very Few Schools, Mostly For Training 'Elite Few' For Church Or Army	Schools And School Systems Started To Evolve, Main Role Was To Produce and Sort Labour For Manufacturing Era	Work IS Learning and Traditional Schools Challenged By Growth in 24/7 ICT Based Learning. "We All Need Learning, We May Not Need Schools"
LEARNING	Learning Occurred in Informal/ Small Group Settings, Usually For Survival Skills	Formal Learning and Teaching Evolved, Learning Concerned With Preparing To Work	Work Is Based On Learning; Learning Becoming Independent of Teaching / Knowledge is a Valuable Short Term Asset
VIEWS ON KNOWLEDGE	Knowledge was the preserve of the "educated few", restricted in access and frequently treated as 'mysterious' or 'secretive'. Only elite e.g. Church and Nobility could read and have books. Knowledge viewed as 'stable', 'long term' and 'finite'	Knowledge became more widely available as books and schools enabled most people to become literate and have access to, and use print based knowledge. Knowledge began to change and evolve and grow in scope i.e. Knowledge is 'relative' rather than 'absolute'	Knowledge became widely available to those with e-access. Formal education systems began to be bypassed by those with internet access. Knowledge explosion:- --'too much knowledge'- accompanied by knowledge is transient but valuable. Rapid rise of Intellectual property as an asset
PURPOSES OF MASTERY OF KNOWLEDGE	Agricultural Knowledge Systems were focused on mastery of Domestic Production and Animals	Industrial Knowledge Systems were focused on mastering and enhancing Physical capabilities	Information Knowledge Systems Are Focusing on mastering and enhancing Intelligence capabilities
FORMS OF GOVERNMENT	SYSTEMS BASED ON 'POWERFUL FEW' E.G. KING NO CONCEPTS OF 'PEOPLE POWER' AND ACCOUNTABILITY	EVOLUTION OF DEMOCRACY AND VOTING RIGHTS PARLIAMENT AND "DEMOCRATIC RIGHTS" SLOW EMERGENCE OF "PEOPLE POWER"	EVOLUTION OF GOVERNMENT INTO ACCOUNTABLE SERVICE DELIVERY ICT ENABLES "PARTICIPATIVE / TRANSPARENT DEMOCRACY"
TOFFLER VIEW OF SOCIETAL "WAVE" STRUCTURE (1)	↑ V1 (1st Wave Society) LABOUR INTENSIVE	↑ V2 (2nd Wave Society) CAPITAL INTENSIVE	↑ V3 (3rd Wave Society) KNOWLEDGE INTENSIVE

Notes

1:- These concepts of societal change as "Waves" and "Eras" were introduced into the literature by Toffler (1987)

This Table is expanded from the earlier version developed by Hough (2009,246-247).

Ref:-Hough, M (2009). *Technology And The Principal: Implications For Leadership*. Ch 11 in: Cranston, N. & Ehrich, L. (2009) *Australian School Leadership Today*. Bowen Hill QLD. Australian Academic Press

There is little doubt that we lack the kind of leadership that many of us consider appropriate or needed, as our daily lives are filled with criticisms of the decisions made by political and societal leaders all

around us. Indeed our ex Prime Minister Mr. John Howard is reported to have said: “ *I must have got it right- everyone is complaining!*”.

It is a commonly reported observation that previously accepted and relatively unquestioned societal organisations such as the Church, Schools, Police-and in particular their leaders- are now subject to constant and intense scrutiny, assisted by the advent of I.C.T. based capabilities which include- but are more than, web based social media. In a recent article I have described this as a “Transparent Democracy” and attempted an analysis of what this means for schools and their leaders Hough (2010).

It seems important to address the underlying reasons for this current situation because, paradoxically, we often perceive that the more dangerous difficult or deprived the situation has become, the more we are willing to accept lesser standards of leadership than from those leaders that we then readily criticise when times are perceived as better!

A second reason even more fundamental than the above, is that we appear to have reached a societal stage of constant but growing discontent, wherein previously accepted high standards of societal wellbeing; economic standards of living as a country and levels of personal comfort are now regarded as inadequate. Paradoxically in an Australian world of relative affluence, safety and privilege, we appear even more discontent with our political and societal leaders and even more ready to criticise and complain about them!

When the power of I.C.T. based systems is now readily available to the general Australian public-especially (but not only) web based social media platforms- then the ability to scrutinise and comment about leadership is greater than ever before. In addition, the (perceived) anonymity of web based commentary platforms means that *greater opportunity* is being coupled to *greater willingness* which results in the commentaries and criticisms being not only in greater volume but also being made in very new platforms provided by the new media systems In short, in a modern post industrial society, the ‘leader-follower’ relationship seems to have evolved and changed, and when the ‘instant information’ capabilities of I.C.T. based systems are added to the mix we face the paradox that the very capabilities that we aim to give to an educated populace (e.g. knowledge, freedoms, rights) now appear to be the major reasons why leaders using current leadership techniques are struggling to be accepted or heard!

Brooks (2013, 42) comments “ *Leaders Today Do Not Believe Their Job Is To Restrain Popular Will. Their Job Is To Flatter And Satisfy It..... Many Voters Have Come To Regard Their Desires As Entitlements. They Become Incensed When Leaders Do Not Respond To Their Needs*”

Features Of Schools That Face the Future

It is important for educators to realize how many of their practices are social ‘constructs’ rather than ‘eternal truths’ and a very good review of the changes

in schooling and the contrasts between traditional schooling and ICT based learning is provided in useful detail by Lee and Finger (2010).

For this presentation, the features of a school that is facing the future are:

- * Acceptance that most I.C.T. capabilities and activities are now occurring OUTSIDE of Schools
- * Partnerships with the Community and especially with students and families with serious I.C.T. capabilities purchased and controlled by them
- * Develops Distributed Learning Networks
- * Has a Networked School Community
- * Promotes Digital Citizenship In Its Staff and Students

Some Useful Current Ideas and Thinking from the Literature

The following is a selection from current literature of issues and ideas that related to the ideas of seminar 1:-

Teacher Importance

Church analogy

Moderator of Uniting Church *Insights* (2014,15-17) describes priorities for the Church as:-

- 1) Leadership
- 2) Property Supporting Mission
- 3) Resourcing

Brown refers to insights gained from David Gillespie's book *Free Schools*- which nominates the one key issue that separates the highest performing education systems in the OECD-namely Finland Hong Kong and Singapore from the rest Brown states(© 2014, 16) " The issue is not teachers' salary, class sizes, nor the approach to gender, but the thoroughgoing mentoring of their teachers"

Social Commentaries

Australian 17 Jul 14, 23-

Buying a car on average wage:- In 1990's-43 weeks

Now in 2014:- 26 weeks with buyers getting much more value for money

Lanchester, J ***Making Our Own History*** *The Independent 23 Aug 2014,Review 17*

HUMANITIES GREATEST COLLECTIVE ACHIEVEMENTS:-

TWO SELECTED ARE:-1) Collective Efforts of Modern Science and Medicine and 2) Development of Societies that offer care and protection for their people from cradle to grave.

Examples:-Feb 2013 the World Bank announced that proportion of world living in poverty had HALVED FROM 1990 TO 2000

BUT

IN TWO THIRDS OF WORLD'S ECONOMIES INEQUALITY IS GROWING

Intellectual Property

For Example The Provenance Of Historic Artefacts

(E.G. The National Gallery of Australia Agreeing To Return Indian Artefacts E.G. "Dancing Shiva"- Because NGA Purchased From Art Dealer Who Faked Provenance)

Cyber Behaviours

Online/ Cyber Bullying

* A Global Interest Issue:- For example UK based Paper *The Independent* ran a 1 week series on this topic in Aug 2014 entitled:- "A Lawless jungle too Dangerous for Children to use:- Bullying Charity's internet warning" NB:- BeatBullying is the UK based charity

- ***UK Data:- 44% of suicides in 10-14 yr olds were linked to bullying"***
- ***Recommended adopting definition of bullying from Crimes Amendment (Bullying Act) Victoria 2011***

* Crowe (2014,7) reports the most recent Australian study by UNSW Centre for Policy Analysis that 20% of children aged 8-17 were exposed to online bullying last year. The most exposed group is the 10-15 yr old. Crowe also refers to:-

- a) Public Debate over freedom of expression vs Explicit Censorship by Govt. approach
- b) Electronic Frontiers Australia a NFP Free speech group argues for more community education and stronger parental supervision

Social Media and Children

Perpitch, N With Friends Like These" The social network blues *The Australian* 14 Jul 2014, 7:- *Social networking is more strongly connected to poor mental wellbeing among children than gaming, TV or browsing the internet-study by UWA of 3000 children in 35 schools. Also found 63% of 8-16 to spend more than the recommended two hours per day in front of screens increasing to 70% at weekends*

Mainstream Commentators About Future Of Education

Dinham 2014, 3 **The Activist Profession** *The Professional Educator Jun/Jul 2014, 3 analyses the major pressures for change that are coming and urges educators to become proactive rather than reactive in influencing the future*

Dinham 2014, 7 **Current Developments in Australian Education: A Tsunami Approaches** *The Professional Educator Jun/Jul 2014, 7 comments on focus on teacher training reforms/ independent govt funded schools (Charter Schools USA, Free Schools in UK)/ Greater autonomy in Govt. schools)*

SOME Relevant Texts:-

*Gillespie David, Free Schools

* Lubienska, C and S **The Public School Advantage: Why Public Schools Out Perform Private Schools** . US based analysis of performance of comparable schools on national student achievement measures and the conclusion that Govt schools are better performing

Patterns In Science And Technology

General Reference:- THE NEW SCIENTIST WEEKLY PUBLICATION

New Scientist 21 JUN 14 19 new hearing aids based on iphone capabilities Swain, F **Now Hear This** Examples of Hearing Aid implants coming through I phone capabilities

Deutsch D (2014,30) **Why We Need To Reconstruct the Universe** *New Scientist 24 May 14 Big Idea 30-31*

Hodson H **Lifting Big** How exoskeletons enhance the physical capabilities of workers in heavy construction e.g. ship building NS 2 Aug 14, 19

Thomson H **Chemical Cuisine Special Report on Future of Eating** Analyses methods of manufacturing i.e. building food rather than by growing it NS 7 Jun 14, 10 -12

NS 12 Apr 14, 5:- **Parental Guidance advised** Reports that Genepeeks Company NY can simulate a genetic profile from prospective parents who can then look at possible futre outcome combinations e.g. height neuroticism . Breast size can be future screened

Same edn as above pp 8-9 De Lange C **Meet your unborn child before it is conceived** Genepeeks Company-Can create virtual embryos which will, allow parents to screen out genetic disorders (and / or select genetically favored characteristics)

NS 5 Jul 14:- Adler, R **The Good Life Would we want to live in a sustainable world?** Reports that we can make the qorld sustainable but with bigg changes

that must be acceptable e.g. leaner and slower life for some but also a healthier happier and more peaceful world

Applications of IT/ Bioogy Interface

Rutkin A Twitter Bots Grow Up Explains how automated twitter robots are spreading information, are generating poetry and encouraging transparency NS Aug 2 ,2014, 20. Examples:- Twitter has 255 million active users 500 million tweets/ day Twitter itself reports:- 5% of users are fake Indiana Uni survey about 15% of surveyed users are fake / Sysomos Marketing form 2013- 24% of tweets are generated by bots

Rutkin A Information from the Inside *New Scientist 31 May 14 , 22 It radio Wave/ Doppler Radar based device that monitors prisoners vital signs Could be commercialized for ne wborn babies / elderly*

Hodson H Smart Radar stands watch *NS as above, 23 Explains how Watchstander short range radar to detect piracy and illegal entry / exit of ships*

NS 02 Aug 2014 reports on drone purchased for filming snowboard videos to search for missing 82yo missing for 3 days and found him

*NS 9 Aug 14, 3:- **Fear of Flying** it won't be easy to persuade people to let machines drive Article review advantages and challenges in aviation and automobiles*

*NS 5 Jul 14 17-18 Hodson H **The Subway run by HAL** Hong Kong subway is one of world's best and that's because AI Overseer program keeps it ticking over at highest efficiency rate of world's subways eg 99.9% on time record*

*NS 5 Jul 14, 18-19 **No Place Like a Smart Home** Your house will anticipate your every need- thanks to a boom in inter connected objects*

*Time Magazine July 7-14 2014 39 page special report PP 39-81 **The Smarter Home:- The dwellings of the Future Will Make You Calmer, Safer, Richer and Healthier-and they already exist***

IT Based Learning And Activities

*Heaven, D **The Obsessioners:- How game designers get you hooked and keep you hooked** New Scientist 31 May 14 , 38-40 (Analyses the psychology of why we play and become addicted to online games and suggest strategies for digital learning and also digital healing i.e. recovery from addiction)*

*Hodson H **Facebook's Biggest Secret** NS 2 Aug 14 p 22:-Facebook algorithms and now driving consumer knowledge and influencing others as if they were initiated by the consumer Mass Media is now not controlled by people but by algorithms created by people No longer a human in the direct control loop ANALOGY Computer driven stockmarket 'buy and sell' programs*

*Von Ahn L **Revolution in the Classroom** NS 17 May 14 , 27 Author of Duo Lingo and founder of CAPTCHA an anti spam service Studying how people learn on a massive scale of online learning e.g. > 10 000 students in sample- focusing initially on reading improvements*

Marks, P **My First super Computer** NS 3 May 14 17-18 Reports that super computers can be installed in cloud access devices and interrogated by e.g. smartphones called Watson the IBM supercomputer will provide access to knowledge bases that can answer questions beyond the scope of web searches.- also we can train watson to deal with existing complex databases and search for complex answers

ONLINE PRIVACY And FREEDOM

UK has legislated individual's right to have data erased

NS 3 May 14, 19:- Brazil has also now legislated for online freedom internet bill of rights sets guidelines for freedom of expression/ net neutrality/ data privacy Tim Berners lee has praised this move " It reflects the internet as it should be"

Financial Times may 31 2014, 1:-

Buck, T. Europe's Politicians welcome Google policy shift on 'right to forget' ruling Praises Google's decision to abide by EU Court ruling to allow users to request removal of links to personal content. The ruling followed a 4 yr. legal process initiated by a Spanish complainant

Science

*Brooks, M, 32-35 NEW SCIENTIST 21 JUN 14:- **POWER STRUGGLE: CHEAP CLEAN RELIABLE CAN WE HAVE ALL THREE?*** Analyses the challenges of unreliable renewables and the need for base load systems. Encouraging heavy users to change behaviours to counter the deficiencies in renewable systems

*Biever, C **Rogue Elements Parts of Chemistry's iconic classification scheme just don't stack up*** Detailed analyses of incompleteness challenges and unanswered questions about current periodic table and its usefulness NS 12 July 2014, 37-41

NS 1 Mar 14, 6 Reports that EU Commission began legal action against UK which has failed to cut NO2 levels to those set by EU and several other countries could be taken to court

Management

*Gettler L **Mental Health a Critical responsibility** Management Today June 2014, 22-23 10 warning signs summarized from "Any change in demeanor" through to "People look tired and don't take care of their appearance"*

Schooling Practices

Sunday Times UK 15 June 14, p13

Griffiths S Ofsted Chief: Schools Must Coach Winners

State schools are failing children by not providing competitive sport, the Chief Inspector of Schools Sir Michael Wilshaw is to warn.....Wilshaw will point to a link between academic success and levels of participation in sport

Ferrari, J Quality of Teaching at Heart of Problem Australian Sat 19 July Enquirer , p21

*There is a blueprint available by John Hattie based on a database of research on the classroom factors and teaching methods that have improved student learning. Published as a book in 2008 called Visible Learning is about "legitimizing what the best do" **Its an approach that underpins the transformation of teaching as a vocation to a profession incorporating the science of learning.....Evidence based approach has not been strong in schools***

MacTiernan A Lessons Reflect Direct Gains The Australian 8 July 2014 Commentary , 10

*Australian Weekend Supplement July 19-20 2014 **Kicked Punched Abused Just Another Day in the Classroom BY DEREK DALTON Ref:-DALTON, D CLASS WARFARE ABUSED IN CLASSROOM DEFAMED ONLINE BULLIED BY PARENTS WHO WOULD BE A TEACHER? 10-14***

A lengthy article which follows the (very bad) experiences of a 40 yo teacher attempting to teach in a rural low Socioeconomic status environment school It reviews one detailed example of the issues of:- nervous breakdowns by teachers/ helicopter parents / death threats/ bad dads / schoolyard stabbings / sexual assaults/ direct abuse of teachers by students Some stats Qld. teachers paid over \$10 M by Workcover for psychological damage State School teachers in SA averaged 5 assaults by students on teachers per school day/ Victoria 2011-2013 reported 506 assaults and 439 sexual assaults Safe Work Australia 2013 report listed school teachers, police and prison officers as the Nation's most frequent mental stress claimants. The case study teacher:- It wasn't the students who made her go in the end or the bad social attitudes of the whole rural town. It was the lack of support from her Principal and Deputy principal

..... Riley study reported that a 'surveillance culture' caused by Naplan testing and a national curriculum has led to bullying of educators by parents demanding better results. The bottom line, parents don't have the same level of respect for teachers ny more. Now with helicopter parent syndrome the response is:- "my child is perfect, they can do no wrong therefore an adult has attacked my child"

(However overall spin is negative image for early part of the article. Article finishes with positive examples of whole of community approached to schooling that are working

Ferrari, J Push For More Class Time for Trainee Teachers Australian 24 July 2014 , 8 Private School principals have called for introduction of bonded scholarships for teaching and the introduction of a medical style internship to train teachers in a network of demonstration schools

Ferrari, J Call for Universities to raise the Bar For Primary School Maths Teachers *The Australian* 15 Jul 2014, 3

FERRARI, J Teaching Riddled with Bad Practices *The Australian* 22 July 2014, *The Nation*, 3 Senior education professors have submitted that much of the teaching that occurs daily in classrooms can be characterized as 'malpractice'.....They argue for evidence based teaching and also the introduction of a medical type model based on the equivalent of teaching hospitals, with much more time in classrooms

Use of corporal punishment

Ferrari, J Pyne Steps In as Curriculum Adviser cops a caning *The Australian* 17 July 2014, 7

Macro Trends:- Technology And Society

Spence, M New technological Wave Brings Uncertain Trends *Global Times* 30 May 2014, B7

" Digital technologies are once again transforming global value chains and with them the structure of the global economy

trends- digital supply chains initially increased efficiency and shortened lead times context-capital was mobile labour less so so economic activity moved to any accessible area that had cheaper human capital

however big shift on demand side as developing countries grew and became major consumers global supply networks shifted again into a process called technology enabled atomization and breaking bonds / need for proximity -millions joined the global economy with wide ranging consequences for poverty , wages and income distribution

now comes a second potentially more powerful wave of digital technology replacing labour in increasing complex tasks e.g. ATM internet banking online ordering

In this new system the vast majority of cost comes from startup e.g. hardware design e.g. sensors and the underlying supporting software. Once this is achieved the marginal cost of hardware is very low and cost of replicating software virtually zero apart from ip issues

THE DRIVING FORCE IS COST REDUCTION VIA RELACEMENT OF LABOUR

This transformation has side effects e.g. for physical goods costs of transport and logistics but production is MOVING TOWARDS THE FINAL MARKET WHEREVER IT

IS. This re-localization will mean a major shift in global supply networks. An extreme form of this is 3d printing- a technology that makes it possible to produce an astonishingly wide and growing range of products by printing them 1 layer at a time Current examples buildings athletic shoes designer lamps aircraft wings.)

In some senses this is the ultimate supply chain where firms produce to final demand with minimal delay

(Other examples self-driving cars and drones get most attention, but computerized logistics e.g. cranes that schedule and move containers now control the port of Singapore)

We are entering a world where the most powerful global flows will be ideas and digital capital NOT goods or services or traditional capital

Adapting to this will require shifts in mindsets, policies, investments especially in human capital and quite possibly models of employment and distribution

No one knows how this will all play out. Attempting to understand where the technological forces and trends are leading us is a good starting place

Additional References

*Clegg, S. Kornberger, M. Pitsis, T (2008). **Managing and Organizations: An Introduction to Theory and Practice**, 2nd ed. London, Sage*

*Ensor, J **Welcome to the University of the Future** UK Sunday Telegraph International news 24 Aug 2014, 28*

*Ferrari, J **Teacher Quality is the key Issue** The Weekend Australian July 19-20 2014, 11*

Helbing, D (2014) 'What the digital revolution means to us'. Science Business 12 June 2014 - <http://bulletin.sciencebusiness.net/news/76591/What-the-digital-revolution-means-for-us>

ITU (2014) The World in 2014. ICT Facts and Figures. April 2014 at <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2014-e.pdf>

*Lee, M and Winzenried, A (2009) **The Use of Instructional Technology in Schools** Melbourne ACER Press*

*Negroponte, N (1996) **Being Digital**, NY, Hodder and Stoughton*

*Newspoll Research (2014) **Optimistic Lot, Facing the Future With Confidence** Research Poll results published in The Australian 15 Jul 2014,6*

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Pascale, R.T, Millemann, M, Gioja, L (2000) Surfing at the Edge of Chaos NY Three Rivers Press

Perelman, L (1992) School's Out NY Avon Books

Purcell, et al (2012) How Teens Do Research in the Digital World Washington Pew Internet Nov 1 2012