

In schools that face the future: libraries matter

Notes to accompany the keynote presentation

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Abstract

This address will provide an overview of the societal and economic pressures that are driving change in post industrial economies and their schools, review the characteristics of selected societies such as Australia, USA and Hong Kong, summarise the current trends in information and communication technologies (ICTs) and their impacts on learning and schooling, review the impacts of generational differences on schooling, and provide focused advice on the features of a school and its library that fully incorporate digital technologies. There will be a final section developing an example of a 'preferred future' for the librarian as the chief information officer of the school, and the library as the Information Network Hub, so that its school remains central to the needs of a modern Australian society and its learning community

Introduction: setting the scene

This presentation will present a strong argument that librarians need to take a proactive senior leadership role in schools analogous to that of the chief information officer in organisations, and that libraries need to evolve into what will be described as iCentres - the hub of the digital learning based activities of a school. There is no doubt that developed service based economies such as that of Australia, USA and Singapore or Hong Kong, are in the forefront of coping with the impact of global change exacerbated by the recent unexpected disruptions created by the Global Financial Crisis. Although Australia has the relative luxury of a significant rural economy base overlaid by a residual manufacturing sector, regionally significant economies such as Singapore and Hong Kong are more extreme examples of economies relying almost wholly on the service oriented skills of their workforce(s).

It is possible to recognise patterns and trends in what is developing to replace what is often called a 'manufacturing' economy, which provided the bases for much of our managerial practices and 'conventional wisdoms' about managing, schooling and learning.

A review of the literature - see Hough (2006a and b, Shapiro, 2008 -see also www.shapingtomorrow.com and www.gsi.sis.org) - indicates that there are a number of discernible major trends emerging as we strive to understand the features of a service economy. Trends such as:

- a) The world is globalising at the same time as the demand for individualised service is growing.
- b) Technologies now lead social change (in that they develop and provide options before we have discussed if they are socially desirable and acceptable).
- c) Technologies are changing the ways in which we can define ourselves, our family units, our work and work units, and our economic and 'social order' assumptions.
- d) As economies focus more and more on intangibles, knowledge is becoming a valuable commodity, and the concepts of value and innovation take on more complex and sophisticated meaning. (For example, Shapiro (2008) reviewed the likely future relationships of the USA with the emerging world order and describes likely limits on the sole superpower but argues that it will retain that position primarily because of its unique abilities to develop ICT based technologies and applications.)
- e) IBM (2010, 7) forecasts: "by 2011 there will be two billion people and one trillion connected objects on the web" and "the planet is becoming smarter. Today, almost anything in the world can be instrumented, interconnected and made intelligent".

Tarrant (2008, 12-15) identified the following global trends:

- The world's **economic axis shifting** to reflect the emergence of China and India as the global powerhouses, whilst the US economy teeters. (One example, the Government of China bailed out Morgan Stanley the No 2 US investment bank to the value of \$US5 billion.)
- **Global leaders** everywhere have universal similarities. They are charismatic, dynamic, optimistic, socially adept but not narcissistic, and are expected to be trustworthy and have foresight. However, they also have differences. Whilst all rely on team performance, there are significant differences in how participative they are. For example, Chinese family firms are headed by leaders who are more authoritarian and controlling than their US and Australian counterparts. USA and Australian employees expect to share in decision making whilst those in China (and many other Asian and some European countries) do not. Indeed, including employees in decisions may even indicate a weak leader in some cultures.
- In some countries, **power and status of leaders is paramount** (e.g. southern Asian countries such as Thailand, Iran, India, Malaysia, Philippines)
- Suggested **global leadership skills** – adaptability, social intelligence, the ability to read the norms and cues of a situation, and influence others through social relationships.
- **Global complexity** brings with it the challenges of escalating rate of change, changing global market dynamics, talent shortages, need for virtual leadership in e-economies, the innovation revolution and the quest for the next 'big thing'.

Caldwell, B., Spinks, J (2008, 7) identified four forms of *capital* in organisations to be strengthened and aligned through good governance:

- **Social capital** (the strength of formal and informal partnerships and networks...that have the potential to support or be supported by the organisation)
- **Intellectual capital** (the levels of knowledge and skill of those who work in or for the organisation)
- **Financial capital** (the monetary resources available to the organisation)
- **Spiritual capital** (the strength of moral purpose and degree of coherence amongst values, beliefs, and attitudes about life and business. Spiritual capital may refer to ethics and values shared by members of the organisation and its community).

In partial summary, a viable long term modern social system is one that successfully overlaps and blends competing sets of pressures, from social, environmental and economic systems. Viable societies and organisations are those that successfully blend and overlap these three requirements into a blended workable system. Schools need to adapt to these emerging realities and requirements

The Australian Setting

A national 'think-tank' exercise has produced the report *Australia 2020* which identifies 4 major trends as follows:

- **Dealing with changing climate** (with sub issues of sustainability, population, water, environment)
- A **National** rather than in individualised approach is needed
- Developing **People**
- Strengthening **Civil society**

It has begun to codify the future aspiration (Australia 2020 p38), "To foster a reputation as an effective global citizen, especially through our contributions to the resolution of global challenges and issues". (Note the ethical and moral implications in this national aspiration.)

At a more specific level, UNSW Engineers (2008) analysed the challenges facing engineering as being derived from

- the needs of both emerging economies and of infrastructure renewal in the developed world,
- climate change,
- the effects of globalisation, e.g. competition for resources/ feeding the world population,
- increased communications and the speed of growth of knowledge,
- the impact of the interconnectedness of societies, e.g. interest rates,
- an ageing world population, and
- changes brought about by technology.

Watson (2008) examined current trends and selected the following as current influences on Australian Society:

- **Eco-exhaustion** - Tired of eco pressures but acceptance of environmentally authentic people and products.
- **Conscious capitalism** - Business must incorporate moral and ethical issues and profit must be balanced with lifestyles happiness and harmony.
- **Resurgence in individualised hobbies and making things** - Emergence of analogue products and personal hobbies especially ones that can benefit the community / disadvantaged.
- **Robotics** - Rapid increase in computing power means practical usage of robots is now feasible and will rapidly occur in jobs and households.
- **Rise of industrial provenance** - Global communications mean that history of production and life history of products will become very important.
- Use of **data visualisation** - The use of maps / A-V and computer power to assist the rapid processing and bringing meaning to masses of data-a visual culture emerging. This will be closely related to:
- **Data mining** - Extracting useful and critical information from masses of data. Ranging from national security through to retail and commercial applications.
- **Restoring rhythm and balance to lifestyle** - As the world economy speeds up, it will be balanced by things that 'slow down', e.g. slow food / retro fashions / work encouraging disconnected activities. An earlier version was seeing global whole systems, e.g. the Gaia hypothesis of world interconnectivity.
- **Intimacy industries** - Creating space and circles for intimacy and contact beyond online communication, encouraging personal and small group experiences.
- **Fantasy and escape lifestyles** - For example, use of sabbaticals, gated communities, second home in rural areas, 'avatars' and role playing.

Two key points to be made from this very general overview are:

- That schooling as we tend to describe it was invented by the needs of a manufacturing society to prepare people to work in that society, and our schools now have many irrelevant features because that pattern of society has ceased to be the major requirement of advanced economies
- That an over reliance on technology will not be adequate to meet these challenges. For example, in the 2008 Australian Boyer lecture series Murdoch (2008, p. 25) stated:

I believe that technology is ushering in a new golden age for mankind. I also believe that technology is making the human side of the business equation-skills and knowledge- more valuable than ever...As technology levels the playing field, the human factor becomes more important, if you run a business. In plain English you need good people more than ever. That's because computers will never substitute for common sense and good judgement. They will never have empathy either. To be successful, a business needs good people who can see the big picture, who can think critically and have strong character.

Table 1 following provides an overview summary of the evolving relationships of societal practices to the socioeconomic era in which they are located.

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 summarising 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
MANAGEMENT MEASURES	Simple Relationships, Often not Formalised Into Organisations Low Levels of Need For Formal Management, Management Theory or Management Training (except for Church or Army)	→ Authoritarian Downward Imposed Rules Hierarchical Structures Quality by Inspection Low levels of freedom/choice for workforce Responsibility directed upwards Quality as defined by Supervisors	→ Shared Authority Rules developed by agreement 'Flat' Structures Total Quality for all activities High levels of freedom/choice for workforce Responsibility vested with those who need to make the decision Quality for customer(s) specifications
PURPOSE AND STYLE OF SUPERVISION	Poorly developed concept Only required in narrow usage areas (eg. specific skill development for relatively simple, usually physical tasks. E.g. craft guilds)	→ Supervision emerged as a body of knowledge to gain more effective performance from persons performing skilled, often cognitive tasks, in a hierarchical environment	→ Concept of supervision radically changed Team or self direction, with supervision as a supportive coaching function, in non hierarchical environments
PROBABLE BASIS OF POWER	[Force - Physical or Religious]	→ [Wealth/Capital]	→ [Knowledge/Information]

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STYLE OF ORGANISATION	[Labour Intensive] →	[Capital Intensive] →	[Knowledge Intensive]
LIKELY STRUCTURE(S) OF ORG'N	SIMPLE HIERARCHICAL DIVISIONAL	BUREAUCRATIC DIVISIONAL	MATRIX FLEXIBLE
LIKELY BASIS OF CHANGE STRATEGY	POWER COERCIVE (P-C)	EMPIRICAL RATIONAL (E-R)	NORMATIVE RE-EDUCATIVE n-r)
LIKELY BASES OF MANAGING PEOPLE	THEORY X BASED DIRECTIVE BASED FEW RULES CLEAR OUTCOMES	THEORY X AND THEORY Y COMPETE LEADERSHIP BASED MANY RULES AND PREOCEDURES EVOLVED	THEORY Y PREVAILS CUSTOMER FOCUS BASED FEWER RULES VALUES AND ETHICS DRIVEN
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
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 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 was expanded from the earlier version developed by Hough (2009, 246-247)

Some selected features of relevance to schools and their libraries

Current trends in information and communication technologies

There are reviews of the trends and patterns of new technologies and their impacts contained in Hough (2008 Ch 12) and Lee and Gaffney (2008). There is an excellent review of ICT based change trends in schools adapting ICT technologies as provided by different authors contained within (Lee and Griffin, 2010) as follows:

- Lee and Finger (2010, Ch1, 6) provide comparative details of 'paper based' vs. 'digital based' paradigms of schooling
- Lee (2010, Ch2, 22) describes the features of a networked school community
- Lee (2010, Ch3, 38-39) describes the features of ICT based growth in schooling as a 'ramp-up' period over 1995-2002, followed by a digital take-off period of 2003-2010. He also reproduces an earlier (2009) conceptualization of the differences between proactive and reactive schools as they evolve with the use of ICT

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- Lee (2010, Table 6.1, 107) summarises the contrasting features of home vs. school, as part of a detailed argument that schools should learn to network with the community and use the resources of home based usage of digital technologies as the major learning resources for students.
- Johnson (2009) reported 7 metatrends in digital technologies (see Lee and Finger, 2010, 201).

However, one of the most pressing technology based applications affecting schools and their libraries is the development of detailed public scrutiny through Government sponsored and endorsed websites such as *MySchool* and the proposed *MyUniversity* Australian initiatives. This trend is mirrored in overseas Government practices, e.g. OFSTED in the UK and www.khda.gov.ae for the UAE. In essence, data (often selected by non educators) about schools is now directly available for public scrutiny, and the reality of school league tables and ‘value adding’ data will be intensively scrutinised and analysed by both informed and non-informed commentators.

This public data has enormous long term implications for schools, their staff and their facilities such as libraries. School librarians will need to be part of a very proactive move by school executives to use this data to benefit schools, as well as react to both justified and unjustified criticism and comment generated from this data.

Impacts of generational differences on schools and learning

As well as the acceptance of the “digital native” vs. “digital immigrant” concept, first proposed by Prensky (2005), the younger learners such as Gen X are characterised by Buchel (2009) - The Ten Commandments of Generation Z

- 1 Thou shalt always be connected
- 2 Thou shalt always be mobile
- 3 Thou shalt use computers at work
- 4 Thou shalt use computers at play
- 5 Thou shalt have many friends that I will never meet
- 6 Thou shalt have a second life
- 7 Thou shalt be ultra-independent
- 8 Thou shalt multi-task
- 9 Thou shalt always be in demand
- 10 Thou shalt invent a whole new language

A representative list of current digital technologies freely available to young learners, together with likely usage(s) is summarised by Lee and Ryall (2010, 121), as part of an argument for schools accepting and using home based resources in a learning partnership.

Features of schools that face the future

It is important for educators to realise how much 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:

- * Partnerships with the community
- * Distributed learning networks
- * Has a networked school community
- * Promotes digital citizenship in its staff and students

Implications for school libraries and librarianship

There is an excellent set of proposals for the future of school libraries contained in Lee and Griffin (2010 Ch 9) in which the concept of the iCentre is proposed. Hay 2010, 151: “*An iCentre is the central facility within the school where information, technology, learning and teaching needs are supported by qualified information and technology specialists.*”

At the most conceptual level the iCentre is an amalgam of the following functions:-

- The school librarian taking leadership roles as the chief information officer of the school
- The iCentre becoming the location for all ICT support and advice
- The iCentre becoming an exemplar centre of a digital learning location and support facility

These concepts will be developed and illustrated in the AV of the presentation but a proposed listing of tasks associated with each role and function includes:

The CIO Role

- Senior leadership role on school executive - Particular focus of expertise, developments and changes in ICT based learning options, and leadership on all policies affected by ICT capabilities
- Responsible for ICT policies - Hardware / software / move to wireless / cloud computing / PDA's / cyber safety/ digital citizenship/ legal conformance
- Responsible for information security - School accreditation to relevant ISO standards / cyber safety / security of school information / access policies /
- Responsible for environmental scanning on behalf of school executive for ICT based developments - Responsibility for maintaining awareness of new trends and capabilities in digital learning and ICT based technologies/ advice and staff development for the school

ICT Support /Advice Role

- Location of ICT help desk and support services
- Physical hub of ICT resources
- Virtual hub of ICT resources
- Staff development and training resource

eLearning Policy and Support Centre

- Provides access a wide range of eLearning tools and resources (e.g. see Hay, 2010, Ch 9)
- Provides training and advice to staff and users - see useful eLearning resources listed in Finger & Jamieson-Proctor (2010, 226-227)
- Improve the digital learning capabilities - see in particular Hay (2010, 145) for a summary of a 2008 research report on the information behaviour of young people, and a list of at least 10 areas of problems and weaknesses in them as information users
- Maher & Lee (2010) analyse student Internet usage patterns, together with the challenges and policies recommended to deal with these issues in a supportive way.

Major eLearning assets

Either on a 'stand alone' (i.e. one iCentre per school), or as part of a wider iCentre network, to provide what Hay 2010, 163 describes as "Online Information services" and "learning through information" scaffolds. Hay also provides a detailed example of 12 assets and services that could constitute appropriate eLearning services and scaffolds.

A preferred future for school librarians

The library as an iCentre

It is clear that the research from the recent Australian Schools Libraries Study (ASLS) supports the development of an all-encompassing technology and learning support centre which Lee and Griffin (2010 Ch 9) suggested should be called an iCentre. Hay (2010,151) suggested that this 2006 ASLS study demonstrated that "students have increasing dependence and demand for a school library facility that provided them with access to state of the art technologies, resources, services and teaching to support their learning. The detailed advice contained within the recent Lee and Griffin (2010) edited compendium is an excellent resource for librarians who plan to be proactive as CIO's, and maintain their influence and presence in futures oriented schools.

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Conclusion

There is overwhelming evidence to support the view that schools need to change to evolve and evolve into networked learning communities, relying on greater partnerships between schools, home and the community. As a school adapts to face the future, librarians and libraries have a major role to play in this transformation. There is very useful and practical advice available, e.g. Hay (2010, 155-156) on how to go about this task of building iCentre capabilities in a school.

Three key learnings:

- Librarians need to actively promote their role as chief information officer and influence the leadership of the school
- School libraries need to evolve into iCentre(s), which houses the knowledge-based resources essential to modern learning and schooling.
- The iCentre will need to provide students and staff with a 'one stop shop' for all resourcing of, technology and learning needs on a daily basis.

You are reminded of the Confucian curse - "*May You Live In Interesting Times*"

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Useful websites

The following are useful websites for researching culture related aspects:-

www.ita.doc.gov

www.culturegrams.com

www.runzheimer.com

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www.hsbc.com
www.worldtrademag.com

The following website is for the Australian Corporate Responsibility Index
www.corporate_responsibility.com.au

The following websites are for Business Excellence Awards:-
www.baldrige.org
www.businessexcellenceaustralia.com.au

The Gates Foundation:- www.gatesfoundation.org/StoryGallery/

Some exemplar websites
<http://fish4info.org/> is an example of a next generation school library catalogue (Ref:- Hay 2010, 153)