

**WHY WE NEED TO KNOW LESS AND LEARN MORE:
MEETING THE CHANGING NEEDS OF 21ST CENTURY EMPLOYERS**

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Author: Charles Jennings¹

A simple question to ask is, 'How has the world of a child changed in the last 150 years?' And the answer is, 'It's hard to imagine any way in which it hasn't changed. But if you look at school today versus 100 years ago, it is more similar than dissimilar.'

Peter Senge, MIT Sloan School of Management and originator of the 'Learning Organization' concept.

Context

Organisations throughout the world are changing. In order to operate effectively in the changing environment of the 21st century they, in turn, need to change. They have to adapt to meet the evolving landscapes of globalisation, ubiquitous communications and the derivative changes being driven by these two powerful influences.

If organisations are to survive and flourish in a changing world one thing is obvious to all - they need to make the best possible use of their people (their 'human resources', human capital' or any other term they use to describe the flesh and bones that drive their enterprises). Without a good pool of talent and employees who can perform to the peak of their potential, organisations know that they will not succeed.

In order to meet this challenge, many organisations are reflecting on the existing approaches that they are using in their training departments and, increasingly, in their learning and development departments. They are continually looking for opportunities to improve organisational performance in innovative, faster, and more efficient ways. When they identify potential improvements they test them and, if tests and pilots are successful, they implement them.

However, the expectation of most organisations is that they should not have to build their human capital from ground up. They expect the UK government education and training system to understand their challenges and needs and then work to ensure that educational strategy and processes are put in place to support the effective development of individual capabilities to meet those needs.

¹ Charles Jennings is Global Head of Learning at Reuters, a British company, and the world's largest multimedia information agency and financial news service. He has been at the leading edge of developments in learning, eLearning and performance improvement for more than 25 years and has held senior posts in academic research and in business, and has led a range of successful learning initiatives across the FE and university sector, for commercial corporations, the UK Government, the European Commission and for global not-for-profit organisations.

In other words, the imperative for educational policy makers and strategists is critical if the UK is to be competitive in the globalised and fast-changing world. The link is clear.

So, what do UK businesses expect from Education and Training?

It may be better to ask what UK businesses don't expect from Education and Training. To answer this question it is worthwhile to reflect on a 2,500 year-old divide. In the 5th Century BC Socrates (Πλάτων) and Plato (Σωκράτης) changed our way of thinking about learning forever. Socrates led his pupils to learning through discussion, the famous Socratic Dialogues. Socrates encouraged his pupils (although he did not even acknowledge that they were 'pupils') to learn indirectly. He placed them in situations where they had to listen, gather and assemble information, and think for themselves before making decisions. Plato on the other hand established the Academy – the first institute of higher learning in the Western world. Plato wanted to be in front of the class. Plato, no doubt, believed in the 'transfer of knowledge'.

To a great extent, most business training has been based on Plato's model (and it has been almost exclusively 'training' until very recently 'learning and development' has been the preferred term – signalling a change in approach). It has been process-led and focused on knowledge transfer and building skills as the end-point. Training has been based on three basic tenets. In the words of Renate and Geoffrey Caine in their 1997 book² arguing why education must change, these are:

- *that only experts create knowledge*
- *that teachers deliver knowledge in the form of information*
- *learners are graded on how much of the information they have stored in their heads*

We now know that none of these statements is either accurate or appropriate for the development of an effective and motivated workforce.

The reasons for this are laid out below.

The challenge for Education and Training leaders is to build effective policies, strategies and approaches to meet the 'new world' expected by progressive CEOs and senior business managers.

Challenge 1: A world of expanding information

Information growth is estimated at around 30% per year, with an increasing rate of growth. The majority of this information is in unstructured form, not in structured books, journals and databases, but in email, instant, text and other forms of messages, in blog postings (blogs have grown from a few to more than 120 million by early 2008), and in other forms of digital storage. In 2005, for

² *Education on the Edge of Possibility* by Renate Nummela Caine and Geoffrey Caine , April 1997
ISBN: 0871202824

instance, instant messaging generated 5 billion messages a day, almost certainly fewer than have been generated subsequently in 2006 and 2007.

At the same time, the half-life of the vast majority of this information is reducing year-on-year. What was understood to be accurate a month ago is more likely understood to be inaccurate today.

Reuters alone files more than two and a half million news items each year and maintains and updates more than 200 million data records, with a daily output equivalent to 23 King James Bibles in 18 languages, 365 days per year.

The rapidly increasing amount of information that employees need to navigate, and its increasingly dynamic nature, creates new demands on employee skills.

A longitudinal study carried out by Dr Robert Kelley of Carnegie Mellon University and Harvard Business School has highlighted the ways that the exponential increase in information that employees need to navigate, as well as other factors such as the dynamic nature of both information and today's workplace, has changed the way employees deal with their jobs. In 1986, Kelley and his collaborators asked the following question of a sample of employees in the 'knowledge industry':

"What percentage of the knowledge you need to do your job is stored in your own mind?"

The response in 1986 was that employees felt they needed to hold about 75% of the knowledge they needed to do their jobs in their mind. By 1997 this figure had reduced to 15-20%. By 2006 it is estimated to be around 8-10%.

Is this dramatic reduction simply due to the growth and increasingly dynamic nature of information? Probably not, but they certainly play a part.

The key lesson from this is that in a world swimming in information an employee is in a better position if they can find the 'right' (most up-to-date and relevant) information at the point-of-need rather than to try to store it in their head. If the 'store and retrieve when needed' model is used it is likely that the information will be either wrong or out-of-date by the time they need to use it.

An education and training model based on the 'transfer' and storage of information and knowledge in people's heads will not serve the needs of either the employee or the organisation.

Challenge 2: The changing nature of work

Added to the challenge of information explosion, those of us focused on helping to build employee capability and performance in UK workforce also face the challenge of the changing nature of work.

There has been a sharp decline in the percentage of manual and physical jobs in the developed world over the past 40 years. At the same time there has been an increase in the percentage (and number) of jobs that require judgement and the ability to deal with complexity and ambiguity. Tacit knowledge is now accepted as being critical in organisations – and making that tacit knowledge explicit through a number of ways – communities of interest, wikis, and informal knowledge-sharing have overtaken the 1990s focus on formal knowledge management solutions.

A US report published in the McKinsey Quarterly two and a half years ago (October 2005) reported that 70% of all jobs created in the USA since 1998 require judgement and experience and that these jobs made up more than 40% of the labour market in the USA. Added to which companies were hiring additional employees for more complex interactions and fewer employees for less complex ones.

This shift from the requirement for employees to carry out transactional to tacit interactions as part of their jobs means that employers need to think differently about how they help to improve employee performance. It also makes employers think differently about the knowledge, skills, and attributes they need of potential employees.

It is no longer a matter of testing potential employees for a required level of knowledge and skills. Employers need to be confident that potential employees have the skills, capacity and motivation to continue to develop their capability every day they are working in the company. Employers also need to be sure that new employees have the capacity to work in a continually changing environment. Even the more 'static' roles such as accounting and finance require continual updating and change as processes and approaches change.

The impact of the changing nature of work is no clearer than when one considers that many young people leaving secondary education in 2008 will be retiring beyond 2050. Most will have many jobs during their working lives, some will work across a number of industries/disciplines, and many will work in jobs which are not invented yet. A large number will build 'portfolios' of jobs and manage their own careers. Others will job-share, work part-time, or leave the work-force for a period and then return.

The changing landscape of the workplace will both reflect and drive deeper cultural and societal change. This is already evident in the rise of the 'personal brand' where employees join well-known companies to gain experience and enhance their own 'brand' and, once they feel they have done so, they move to work with another company that will help them build their 'brand'. In a talent-scarce environment, this approach presents organisations with significant challenges.

Challenge 3: Building employee capability effectively and efficiently

Many organisations are looking to new and different approaches to help build employee and organisational capability. They are turning to the potential that is offered by technology to build an effective workforce.

Most learning professionals have realised that without technology they will always be constrained by the 'richness/reach' trade-off³. This principle explains that:

*"To the extent that information is embedded in physical modes of delivery, a basic law governs its economics; there is a universal trade-off between 'richness' and 'reach'"*⁴

In the past learning within organisations ('training', really) was focused on transferring information and knowledge to learners in formal settings – principally in classrooms and workshops. This model was built on traditional formal educational models of curriculum, 'teacher' (or expert) and a group of learners being together in one point of time/space. In some cases in these environments time was put aside for skills development in simulated environments, again within the classroom or workshop. Assessment of the acquired knowledge or skill, if done at all, was carried out immediately after the formal training session.

The advent of networks and eLearning has allowed the learning process to break free of the time/space constraints but, nonetheless, most eLearning has retained the 'course' paradigm with a session of information/knowledge exposition and some skills development in simulated environments followed by some form of assessment. For at least the past 10 years there has been talk of learning in 'bite-sized chunks', or learning objects, and there is an increasing use of this approach, but the majority of eLearning programmes are at still least 30 minutes long and many are an hour or more. This will no doubt change in the future.

As the hold of the 'course paradigm' is broken, as it inevitably will be, capability-building approaches that are likely to be widely used in organisational learning will be very different from those used in the past. This will present a challenge for learning professionals working in organisations and for the professionals working in Government education and training strategy and policy groups. They will need to think and plan differently, outside of 'course' and 'curriculum', and beyond 'competencies'. There is a need to the thinking to performance – and how individual, team and organisational performance can be nurtured and built using new approaches.

Forward-looking organisations are already exploring the use of virtual worlds, immersive learning environments, communities and virtual collaborative learning, mobile learning tools, context-sensitive performance support tools and many other approaches based on technology and Web 2.0 developments in their learning provision.

The second revelation that has become apparent to many learning and development professionals over the past few years is that the majority of learning that occurs within organisations in fact occurs while the employee is engaged in carrying out the job. This revelation has been supported by research findings across a number of industries. Jay Cross, one of the leading thinkers on informal

³ The richness/reach trade-off was first described by Evans & Wurser in their ground-breaking book *Blown to Bits: How the New Economics of Information Transforms Strategy*, Harvard Business School Press (1999)

⁴ *ibid*

learning in organisations, has brought a lot of this research together in his recent book⁵ in a very elegant manner. Jay was is originator of the term 'e-learning' and has determined from studying the research that 80% of learning in organisations occurs on-the-job, through addressing real-life problems, through working with more competent colleagues, through being given stretch assignments and in many other ways. The other 20% of learning occurs trough formal means – classrooms, workshops, eLearning courses etcetera.

Some other organisations have refined the 80:20 'rule' into a 70:20:10 model. Organisations such as Goldman Sachs, Microsoft, Dell, Nokia, Sony Ericsson, Reuters and others use 70:20:10.

The 70:20:10 model is based on the same research as the 80:20 model and views employee development in three components:

- 70% of employee learning and development occurs through real-life and on-the-job experiences, tasks, and problem solving. Even with classroom programmes the really important learning takes place back on the job when the knowledge or skill is applied to a real situation
- 20% of learning and development comes from coaching, feedback and from observing and working with role models and colleagues
- 10% of learning and development comes from formal training, whether through classrooms and workshops or through eLearning.

The improved understanding of how adults learn and the emergence of models such as 80:20 and 70:20:10 are leading organisational learning through a maturity curve. This model⁶, described by IBM, describes three phases of maturity in organisational learning:

- 1. Access Phase: learning is 'separate from' work/tasks. This phase typically comprises event-driven point solutions (courses, learning events)
- 2. Integration Phase: learning is 'enabling work/tasks. This phase typically comprised greater learner control, enterprise-wide learning systems, blended learning and focus on targeted business performance
- 3. On Demand Phase: learning is 'embedded in' work/tasks. This phase typically comprises pervasive and embedded learning infrastructure, dynamic learner content/context, and full business alignment

There is no doubt that the challenges are considerably greater when preparing young people will enter the workforce, and when supporting them once they are within the workforce, when in an organisation has matured to Phase 3. As time passes, more and more organisations will mature to this level.

Without the support of technology, learning and development professions working in organisations with large geographical footprints, especially, cannot possibly reach and support managers and employees through informal and on-the-job

⁵ *Informal Learning: Rediscovering the Natural Pathways That Inspire Innovation and Performance* by Jay Cross (2006)

⁶ Moving Towards the On-Demand Model - IBM Services

learning. The renewed interest in electronic performance support (ePSS) tools is one example of their attempt to ensure on-the-job learning is both effective and efficient.

Technology is also being used in other areas to build employee capability. There has been an increasing focus on software tools and environments that support collaboration and communities of practice. Social network analysis and tools are being used by some organisations to tap the rich seams of experience and knowledge in the heads of their employees and ensure they are shared across the organisation. There is an acceptance of the tenet “who you know in your organisation affects what you know”.

The challenge of all the above for Government education and training strategists is that the landscape is becoming more complex year-on-year. Organisations no longer simply need new employees (or existing employees) to have a defined set of professional skills. They still need employees who have domain skills, but they also need them to be good communicators, good collaborators, with good discovery skills, and the right behaviours and attitudes to learn, and continue learning, throughout their working lives.

Challenge 4: Generation Y

“Our children today are being socialized in a way that is vastly different from their parents. The numbers are overwhelming: over 10,000 hours playing videogames, over 200,000 emails and instant messages sent and received; over 10,000 hours talking on digital cell phones; over 20,000 hours watching TV (a high percentage fast speed MTV), over 500,000 commercials seen—all before the kids leave college. And, maybe, at the very most, 5,000 hours of book reading. These are today’s “Digital Native” students”⁷

The impact of Generation Y ('digital natives', 'the MTV generation', 'millennials', 'Google generation' etc) on workforce capability building in the future should not be underestimated.

Generation Y are more likely to be entering the workforce with different concepts of skills and different ideas about their careers.

Many Generation Ys have been brought up in a 'personalised' world at home and with their friends while their education has, at best, managed to 'mass personalise' its offerings for them. Their expectation is that their employers can provide them with:

- Just the right **CONTENT**, at
- Just the right **TIME**, on
- Just the right **DEVICE**, in

⁷ Do They Really *Think* Differently? By Marc Prensky From *On the Horizon* (NCB University Press, Vo 6, December 2001)

- Just the right **CONTEXT**, and
- Just the right **WAY**⁸

Clearly this presents a challenge to employers and to employer learning teams.

However, members of Generation Y are much more likely to adapt to new ways of learning when presented with them. They have grown up with technology and are more likely to be comfortable with using computers and other digital devices for their learning.

A further challenge to employers that is presented by Generation Y is that they often have a different understanding of '*basic skills*'. To the generations before them, to have '*basic skills*' meant that you had been through some formal learning and, usually, had been assessed at a specific 'basic' level. To Generation Y, '*basic skills*' very often means basic awareness. They have a high-level knowledge of the concepts, and can return for a 'deep dive' when, and if, they need to use the skill. They have grown up with vast amounts of information and appreciate that they cannot retain it all in their heads. Increasingly over recent years, they have found that the information is relatively easily recovered when it is needed, whether it is from a hard disk or from Google.

One aspect of the Generation Y approach that aligns with the emerging technology toolset in organisational learning is that they tend to arrive in the workforce with stronger collaborative skills than previous generations. Members of Generation Y tend to be natural just-in-time learners and natural collaborators.

The challenge for Government education and training strategists is to determine how they can create experiences for Generation Y (and the generations following them) during their formal pre- and post-16 education that builds on their personal experiences in collaboration and just-in-time learning and helps them migrate into using the range of collaborative tools that are being deployed across the organisations they will be working in as adults.

Charles Jennings
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⁸ Wayne Hodgins, Strategic Futurist and Learning Expert, Autodesk Inc.