

Deep Learning



*Recent examinations of the learning process have drawn a distinction between learning and what has come to be called deep learning. **Sarina Sorrenti** here explores some of the parameters of deep learning and its impact on the developmental curve of executives and businesses*

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Coffee places have had an amazing renaissance in the past ten years, particularly among the mobile workers who use the excuse of coffee to meet with a colleague or client or borrows the Barista table space to catch up on work between meetings. There is a particular coffee place I frequent more regularly than others because of their friendly service in general but particularly because of the personal acknowledgement I am given as I walk into the their premises. Its convenient location close to the office and its adequate parking facilities are added bonuses. There is another coffee place to which I used to go frequently but which I now visit only occasionally. There, the coffee is OK but each time I call in I note that I am not greeted personally; my earlier loyalty was not acknowledged. My decision to use the former more often and the other less frequently raises in my mind the question - why is it that businesses differ so much in how they operate and, in particular, why is there a differential in their apparent capacity to learn how to satisfy their customers?

Clearly, the retail environment and the business world as a whole could achieve significant gains if they were to learn more about how to relate to their customers. How do SMEs learn? Do SME leaders create an environment where learning is a part of the way they and their employees work? Is learning a fundamental principle that underpins sustainable business? Businesses vary to differing degrees in their focus on learning. Some consider it an important strategy for on-going improvement while others fail to make the time to learn and limit learning to a training environment. Here, I would like to explore the concept of deep learning and how this can support continuous improvement among Australian leaders and SME personnel.

The word *learning* can conjure up many notions and experiences for us all. The experiences might include recollections of anxiety-creating environments such as sitting in a tedious maths lesson, studying for exams or tests, listening to a monotonous lecture or training seminar, locked up in a small room listening to someone take four hours to tell you how to do something you can already do with maximum efficiency. The word can also recall positive experiences, where personal insights and that *a-ha!* feeling is achieved and we were enabled to develop the capacity to act differently to how we did before. If our experiences with learning have tended to be negative and not fulfilling, it is no wonder that many organizations do not make the time for it and do not value it as an important part of building a business and developing people.

For me, primary school was a time I try not to remember. Academically I was bright; socially I was inept and was bullied. It was not what I would refer to as a thriving learning environment. What I did learn at Primary School is if you didn't stand up for yourself, others wouldn't and if I kept being quiet and subservient I would continue to be bullied. During my first year in secondary school, I was able to do OK academically and socially as I acted differently amongst my peers. I was able to change my behaviour. I learnt a new way of interacting with peers that enabled me to survive.

As with my primary school, there are many business environments where the technical aspects and task-related parts of work are carried out efficiently even though the teamwork and relationships are strained and non-supportive. A learning environment needs to support both task and relationship building. A truly productive environment is generally one where people look forward to work and feel they are valued, safe and encouraged. As business leaders are we mindful of creating these environments for our staff - even more importantly for ourselves? My own primary school example demonstrates that one can learn through negative experiences. Unfortunately, I needed to leave and move to a new environment to have the courage to apply the new learning. Are we creating business environments where we can 'try out' new skills and different work methods or is the status quo endorsed? In this millennium we are bombarded with information. Have we been able, in our business environment, to sift through what is valuable knowledge that is critical for success and what is noise?

Learning is not simply the ingestion of information: it is a process. For example, I can read a recipe on how to cook a soufflé. This does not mean, however, that I have the capability required to cook such a delicate dish. Remember that when one first learnt to drive a car, reading the Learners manual certainly didn't enable one to drive effectively. Try teaching your son how to ride a bike by reading a set of instructions. Thus we ask the question -in business, do we treat information ingestion as learning? Information without enabling effective action is not learning. For example, a memo on how to use the new zip drive is very interesting but it is not until I put that memo into action and use the new zip drive, that I would move from being informed to learning a new skill. There is a continuum of effective learning that moves from information gathering, understanding, through application and know how, to a level of wisdom that expresses itself in an ability to know when and when not to apply and adapt one's learning. This wisdom level I will refer to as deep learning: that is a level of wisdom in which one is so proficient at something that one can virtually unconsciously adapt a skill to suit the circumstances.

Peter Senge, in his book, *The Fifth Discipline Fieldbook*, defined Learning as *enhancing our capacity for effective action*. In this volume he describes the process of learning as an interactive wheel that links together reflection/thinking and doing/action. Edward Deming, in his book *The New Economics*, linked the importance of theory and experience in his theory of learning when he wrote, "without theory, there is nothing to revise. Without theory, experience has no meaning. Without theory, one has no question to ask. Hence without theory, there is no learning". The *Shewhart Cycle* developed by Walter Shewhart in the 1930s,

described learning as a continuous improvement cycle comprised of four phases – Planning, Doing, Checking and Acting (PDCA). The PDCA cycle links together theory, thinking, acting and reviewing to drive improvement.

Learning as a process involves theory – the recognition of a set of ideas/assumptions, followed by reflection through a cognitive process, action through doing or experimentation and a review to check that our actions have led to the intended results. If we return to the issue of learning to drive a car, we see that the process of learning took us through the theory stage of reading a manual, the thinking stage of understanding what the manual was trying to state, the doing stage by practicing the parallel parks, 3 point turns, obeying the road rules and finally review, and then the issuing of a license which checked the Theory/Thinking/Doing stages. When we run our businesses we need to be conscious of the theories/assumptions we hold and, more importantly, to we check them out to ensure we are achieving the intended results.

I was once employed by an organization that believed in Shewhart's PDCA cycle and in solid quality and best practice principles. The execution, however, did not match the theory or espoused strategy and the business eventually ran out of cash and was taken over.

At other times, I have worked with organizations that espoused and practiced their theory of best practice management and followed it through with supportive processes, measurement and reviews and developed exceptional performance in all parts of their business. *The First XI Winning Organizations In Australia*, written by Graham Hubbard, Delyth Samuel, Simon Heap and Graeme Cocks (published in 2002) reviews winning Australian organizations over the last 20 years and provides a comprehensive list of both public and private organizations. The top eleven listed are Qantas, Lend Lease, Telstra, NAB, Salvation Army, Rio Tinto, Macquarie Bank, Harvey Norman, Westfield, Brambles and Woolworths. In their research the writers also identified that the Plan/Do/Check/Act cycle supported rapid adaptation and effective execution in these successful organizations. Collins and Porras in their research findings, published in *Built To Last*, recognized that America's top sustainable organizations also used concepts of continuous improvement as driving learning processes.

How often, in business, do we reflect and review our actions and strategies and encourage deep learning to prevail?

Learning needs to be aligned to the key knowledge areas and core competencies of a business. For example, developing exceptional technical knowledge in Microsoft Project may not be relevant for an organization that does not see Project Management as a key knowledge area and core competency.

What is relevant knowledge for businesses? This will of course vary from business to business. When organizations do not know what core competencies and critical knowledge they require to be successful, there may be a scatter gun approach to management of the overall business. A scatter gun approach could include a very broadly diversified product/service range, mass marketing, broad positioning, many distribution channels and many forms of information channels. A scatter gun

approach to managing knowledge and business could work and does work for many organizations. However it can be a very costly and a wasteful way of developing competencies and building a business. Focussed organizations can achieve their objectives in a much more efficient manner.

Business core competencies may be defined as the key things that a business is capable of doing well and which that differentiate one business from another. These can include services, knowledge and specific skills. In this writer's *e-based consulting* company, core competencies include designing and administering on-line surveys, management consulting, IT&T consulting, leadership coaching, strategic planning and client/ partners relationship management. The key knowledge areas that we require must, therefore, align to these core competencies.

Many SMEs are formed by individuals who have a particular expertise; e.g. plumbing, accounting, interior design, software development. Michael Gerber, in his book *the E myth*, described the dangers associated with SMEs that are established by owners with specialist skills. I recently coached a small business plastics manufacturer who had difficulty in developing sales for the business. The business owner's personal strengths and competencies were in manufacturing and the operation of machinery. The business owner struggled with the sales process, approaching new people, developing quotes and managing the sales relationships. To his credit, he acknowledged that he required support in developing new skills. He, like many SME owners, had a dilemma that was reflected in the question - how many 'roles' does the business owner take on? Over against the question - how many people with complimentary competencies should she/he surround themselves with? To this dilemma, I have given the name *the lonely martyr syndrome* a condition in which many SME owners have an amazing belief that they should take on all the responsibility. Nobody else can do the job as they can. Then the pain of taking on all that responsibility becomes a self-fulfilling prophecy and martyrdom prevails. Many SME owners believe they cannot trust their workers, so they hire people who will match this profile. The egocentric gains resulting from being a lonely martyr provide enough reinforcement for the SME owner's egocentric behaviour to be perpetuated to the extent that it can lead to high anxiety, personal breakdown and a very lonely existence.

I speak from first-hand experience. My own example of living out the 'lonely martyr' syndrome began as I was, initially, the first partner in our business to take up a full-time role in the business. I became chief product developer, chief of sales, chief financial officer, administrator, alliance partner manager, customer service manager, senior consultant and researcher... the list seemed endless. Juggling each of the roles was fun to begin with but it soon became obvious that some roles I enjoyed more and had better skills to apply than was the case with some others. I did not leverage off my partner's skills enough. In fact, as a good martyr does, I convinced myself that I could do it all; that it would be better for the partners and the business if I did as much myself as I could. ... Let's just say after a number of end-of-quarter financial MYOB mistakes, the mirror was swiftly displayed to me and realised *I had to let go* and allow others, whom I knew deep down had more relevant and applicable skills than my own, to take on their respective roles. By doing so, of course, I was able to concentrate more on the competency areas in which I have strengths. I soon came to feel that a lot of the other responsibilities were off my shoulders and undertaken by

my partners. Significantly, the entire business has benefited from this exercise and is, not surprisingly, performing better.

The owner of the plastics manufacturing plant, like myself and many other SME managers need to understand and become conscious of personal core competencies and business core competencies. Dee Hock, in his book *The Chaordic Organization*, states that leaders need to surround themselves with people who are smarter than themselves. Attracting employees or partners with complimentary skills brings benefits to the whole organisation. As SME Leaders, are we comfortable in acknowledging that we can't do it all on our own? Are we willing to surround ourselves with others who have the skills to take more on?

Do you ever catch yourself doing something the same way you have always done it and expecting a different outcome? That may well be the first step towards insanity. Too often, businesses apply the same strategies and actions and expect better outcomes, without stopping to reflect on whether there is a better way. Businesses that find themselves in this situation could benefit from exercising some deep learning practices. Deep learning practices make it OK to ask *why?* and *what if?* and put value on thinking and reflection and not just on the doing. As human beings, we are born with an amazing hunger to learn and grow. Have businesses lost the practice of reflection, reviewing and constructive questioning?

At *e-based consulting*, we have annual strategy and product reviews where we ask ourselves many deep questions. These questions include: is there still a market for this service? What competitive or substitute services are there?, Do we have any competitive advantage?, Why should we continue?, Where else could we succeed?, Does this service still align with our purpose and values?, Are our assumptions about the benefits of these services still true? How else could we use this service? Chris Argyris developed the terms *single loop* and *double loop* learning to describe surface level learning and deep learning. Single loop learning is problem solving; the ability to detect and correct errors - e.g. identifying a problem, fixing it and then checking the results. Double loop learning goes deeper than problem solving and questions the underpinning assumptions, norms and values associated with a situation. Of course it does not ignore single loop learning but incorporates it within itself - e.g. what are the assumptions that underpin this problem and how does this problem align with our values and how do the answers to these questions lead to a solution to the problem and check the results against values and operating norms? Even where learning does permeate an organization, the major portion of it is likely to fit into the single loop category of reviewing actions, strategies and solving problems. Getting to deeper learning requires us to become conscious of our mental models and work paradigms and allows these to be questioned. When we find ourselves repeating the same mistakes, getting less energy from our work and falling into the 'lonely martyr' role the time is ripe to question underpinning assumptions and values. The deeper learning experiences can help expand the way we see the world and allow us to broaden our understanding of why things are happening as they are. If you ever catch yourself down the 'lonely martyr' path ask yourself how did I get here? What are my assumptions and values?

Deep learning involves wisdom – the ability to know when to apply something and when not to and double loop thinking about our assumptions and underpinning values.

Australian SMEs have an opportunity to develop learning environments in alignment with the core competencies and key knowledge areas of their respective businesses. SMEs can become incubators for life-long learning or they can be cages for costly on-going mistakes. It is a matter that goes to the very heart of leadership. The challenge is to, watch one's self for a week and become conscious of the learning environment of which one is a part. We might be surprised with what we discover.

As Confucius said, "Talent neglected or misguided; investigations into the nature of things not completed; what is rightly understood but not acted upon and the lack of energy to rectify what is wrong – these are the things which pain my heart, which I exist to remedy"