From the Kitchen

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Is the education we offer our young people equipping them for a fulfilling life?

There is too much knowledge available to impart it all. How do those who set the curriculum choose what should be taught? The pool of knowledge is growing exponentially; however, the pool of useful questions is much more manageable.

I learned to use a slide rule and logarithm tables (and mental arithmetic) at school because we had no electronic calculators. I don't believe it would be useful today to teach the use of slide rules and log tables, because pocket calculators (and the calculators built into most mobile phones) have made these unnecessary; but mental arithmetic *is* a useful skill, in order to know whether the calculator answer is within the realm of possibility. And learning to do mental gymnastics teaches us to use our minds.

Thinking is essential to remaining mentally healthy, as physical exercise is essential to physical health. Engaging in activities that exercise the mind helps protect against depression[1] and, in the long term, may help prevent some of the scourges of old age: Alzheimer's disease[2], Parkinson's disease, dementia[3] and memory loss[4].

Most of us would consider it fortunate that there are people who innovate, who invent things. Would this be possible if the would-be inventor didn't think? Inventing requires the ability to think beyond what is in front of you. It requires imagination. While most of us will not be inventors on a large scale, most of us do innovate; we find solutions to common problems and find ways of fixing things around the house. Some people become inventive out of economic necessity and gain skills and confidence in the process.

We do so by asking questions – questions such as: "how can I fix this?", "can this work better?", "can I save money by … ?" It is thinking 'outside the box' that leads to innovation, development and progress.

An example of our tendency to think within set or imagined boundaries is the puzzle on the left. The task is to connect the nine dots by drawing four straight lines and passing through each dot only once, without lifting your pen. I will share a possible solution with you in the next post.

If you are unable to find a solution on your own, what is stopping you? What assumptions are you making? What questions do you ask and what questions do you fail to ask? Reading the instructions for the puzzle above, what do you automatically read into those instructions?

A rotary clothes hoist is an invention on a large scale with large-scale adoption; a wire coat hanger doing service as an aerial on a car is one on a smaller scale with minimal uptake. Seeing a more efficient design for a wave-driven electricity generator in the shape of a coastal blow-hole[5] is an insight leading to a solution with possibly major environmental impact; designing a ceiling fan which works on the flow of hot water going to a shower head, instead of using electricity[6] is an application of thinking which may have a lesser effect on the world. However, all of these are the result of people thinking.

George Bernard Shaw wrote: “Some people see the world as it is and ask ‘why’?; I see things that aren’t and ask ‘why not’ ”. I enjoy applying this to my life. Much of my success in my relatively short career as a lawyer in the 1970s was due to asking “why not?” I irritated many of my colleagues with this and made a number of enemies. But I was able to make a difference. I often refused to accept the contemporary wisdom about a legal approach and would go hunting for alternatives. This would usually result in a better outcome for my client and greater satisfaction for me. What amazed me, however, was that my colleagues, who could have benefited from my bouts of thinking and likewise have done things differently, with likewise better results, mostly continued with what they were used to and complained that it was unfair that I should do so well by ‘bucking the system’.

Occasionally I discovered that the current interpretation of the law that was in vogue about a particular point was, in fact, wrong and I was able to convince a magistrate of this. But this again often resulted in animosity from other lawyers, who told me I had no right to challenge the way ‘it’ had been done for years. They seemed frightened of anything different from ‘it’. Where did their fear come from?

This animosity towards colleagues challenging the *status quo* is also seen in the medical profession, where even incontrovertible evidence that a condition is caused by A and not B can be met with disbelief and even hostility and derision.[7]

Another example of thinking differently is a farmer I knew in the Darling River flood plain. Instead of bellyaching, along with his neighbours, about the regular inundations, he spread pumpkin seeds into the eventually receding water from an aeroplane and harvested bumper crops. His neighbours laughed at him and also complained that he was not ‘playing fair’; but none followed his example.

G B Shaw also wrote: “The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.” I can think of both positive and negative results coming from this approach.

1. Robert Werman, MD, *Living With an Aging Brain* 2003 Freund Publishing House, ISBN 965-294-141-7.
2. G W Arendash and colleagues have done research on ‘Alzheimer’ mice, published in *Neuroreport* 2004;15:1751-4. Work is also being done with human Alzheimer’s patients at the Alzheimer’s Center and Research Institute

   Also *Neurology* 2002;59:1910-1914

   Also *Journal of the American Medical Association* 2002;287:742-748
3. Prof. Helen Christensen, whose work on ageing is quoted on the ANU web site.

   Also see *New England Journal of Medicine* 2003;348:2508-2516, 2489-2490
4. *Journal of the American Medical Association* 2002;288:2271-2281
5. See the video on the OceanLinx site.
6. Shown on the ABC program *The New Inventors*
7. For instance, the attitude to Barry Marshall and Robin Warren, who found that many stomach ulcers were caused by a bacterium.

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[More in the next posting, including a solution to the puzzle.]