

Inquiry into Education, Employment and Youth Affairs in the ACT.

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To: committees@parliament.act.gov.au

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Thank you for extending the date of this inquiry. As I just noticed it yesterday, this submission is hurried although it is the result of decades of mathematically oriented research in the professional workplace. While noting that this year is AD 2018, it may appear unusual that the terms of reference do not refer to information technology.

1. *The extent, nature and consequence of insecure work in the ACT, including but not limited to:*

i. the use of group training, labour hire and sham contracting in particular industries and in the supply chains of particular sectors;

i.1 The ACT is, to an extent, a fly-in / fly-out city with hosts of workers arriving each Monday. The ACT is also the place where significant financial transactions are awarded and a migrant working population exposes Australia to significant financial risk.

Recommendation: Honour The Australian Constitution and its Governance Procedures, allowing the States to do their work as specified. If centralists wish are very keen to change this arrangement, they may consider changing The Australian Constitution.

i.2 Education and group training are of existential importance in modern societies. Mathematics means Knowledge in Greek and the Dutch word Wiskunde means Wisdom. We tend to refer to Numeracy in a “I hate Maths” tone. Our Maths standards are poor and declining at an alarming rate. One reason, according to Head Maths of a University in Sydney, may relate to the fact that 40% of all yr-7 to yr-10 students are taught by teachers with no University Mathematics. Experienced and successful Maths teachers may be strongly encouraged to consider other employment options. As a consequence, even the most revered of all professions is becoming casualised. The result is that all Maths Teachers in some communities are being encouraged to work in a parallel employment situation and reports indicate that this is succeeding – i.e. excellent teachers are being weeded-out. This is an international phenomenon.

Quote-2 from a Chief Economist of a major Australian bank. “The future for Education in Australia, especially for our universities, is chilling unless we raise our Maths Standards”. In addition, the future for several industries in Australia is chilling unless we raise our Maths Standards.

What is Maths? Whatever definition we use, Maths in modern societies is different from what it used to be several decades ago. Students, professors and business leaders need to know when they are being fed false information that can only benefit organisations related to the provider of that information. Certainly concepts such as Artificial Intelligence (AI) need to be taught as poor AI-strategies can quickly bankrupt financially strong organisations.

A quote from my [straal19-fB](#) page is proving effective: "In America, intellectual giants such as Richard Feynman (Text Books), Tom Leher (new New Maths) and Elvis Presley (Ivy League) have been successful in defending their standards." Several international reports on cheating in international Education establishments have been published in recent weeks. Happily forces to lift Maths standards in some Australian States are getting organised.

i.3 Group Training: The word Education stems from Educare, to draw out. While broadcast-techniques and technology-based presentations may be useful in certain circumstances, participants need to be able to show what they know and question the teacher. As an example, a good yr-10 student told me the answer to a simple problem was " $x = 1$ ", explaining that there was only one " x " in the problem. This formed the basis for an excellent class that rocketed a young lady, who was struggling, towards inclusion in the yr-11 'going to uni' contingent a few months later. It works!

i.4 Pavlov's second experiment showed how to confuse animals or people. If dogs are rewarded when shown a red toy and punished when shown a green one, they will respond accordingly. Once a pattern is established, randomly alternating the colours results in total confusion. The strategy of randomly changing the techniques to solve elementary Maths problems may achieve the same result.

1.3 Sham contracting.

1.3a I have worked overseas and have seen the techniques that people use in order to be able to secure contracts for their people in countries such as Australia. This cannot be controlled.

1.3b I have made professional 'suggestions' to organisations that are worth enormous amount of money to Australia's economy. Normally such work would be regarded as 'proof that this person has the skills we need to lift our standards'. Nowadays such work is no longer even acknowledged and the benefits are quietly accepted or not as the case may be. As a result, skilled people are excluded from the workforce while new recruits are 'trained on the job'. I strongly approve of on-the-job-training but the trainer needs to have the knowledge, skill and integrity to do the training. After I met with senior managers from a large ASX-organisation in 2017, they gaily informed me that they

were 'off to do some AI-training' that afternoon. AI is a separate profession that requires decades of training and experience but these managers may have acquired sufficient skills to say "We'll take the pink one, thanks". Sham contracts may be awarded to organisations to experiment with training.

1.3c A retired federal politician recently asked me "What is AI?" and politicians may need to lift their Maths and Technology standards for today's technology-driven world. The same politician did not appear to have read The Australian Constitution. Given that well-remunerated elected representatives are only temporary employees, should their training be far more intensive as a result? The above question applies even more strongly to their office staff. Is corruption the word that describes well-paid staff accepting dubious advice from CEO's who do not understand business?

1.3d What is the status of AI? I checked with the researchers whose opinions I value and there may still work to be done. Do international experts contradict each other? CEO1 "I know nothing about quantum computing". CEO2 "CEO3's understanding is very limited". CEO4 "I sold my shares several months ago". CEO5 "We may slow down some of our older products". CEO6 is willing to discuss new directions for AI and I did, on request, write to Steve Hawkins a few years ago. Were CEO's disappointed at CES's 2018 AI-results in Los Angeles? Is there an element of sham in the sales techniques international CEO's use for AI, Education etc?

Recommendation: Train our politicians and all Australians thoroughly.

Suggestion-1: As I have decades of IT international experience that included hands-on IT Security and soft AI-development, I am happy to use my skills to train some people within your organisation although I know that most of your people would perhaps classify themselves as Experts already. Running this suggestion past your manager would perhaps confirm several points I am making in this submission. Is your manager experienced, honest, well-informed and well-educated? Congratulations if yes, as managers are instructed to pass such rare skills to young ACT employees!

Suggestion-2: I am happy to tot-up a Cost / Benefit analysis of any AI project Australian Governments may be working on. Running this suggestion past your manager would perhaps confirm several points I am making in this submission.

Recommendation; Given the fact that international organisations have spent 'oodles' on buying questionable AI-products, we should perhaps legislate that any Government project that involves technology be costed by an organisation such as the RBA, APRA or ASIC.

1.4 AI Candidate Selection techniques. Skilled, well-qualified people can be eradicated from the job selection process by so-called AI programs that are trained to focus on exact responses to the selection criteria. Obama and Trump both wrote about HR Risk in their pre-election books.

ii. allegations that labour hire and sham contracting arrangements are being used to avoid workplace laws and other statutory obligations, such as underpayment of wages and entitlements and avoidance of payroll and income tax;

Workplace laws are being diluted so Australians have little protection. As an example, we may see a PM in another country riding a bike with their essential bike-helmet strapped firmly to their handlebars. In Australia, teams of people control the strict adherence to laws that the populace may consider to be silly and counter-productive.

iii. allegations of exploitation, harassment and other mistreatment of workers employed by group training organisations and labour hire companies;

The definition of Harassment depends on the industry and the type of person. For example, experienced and successful Maths Teachers may be harassed out of their jobs and even imprisoned for alleged breaches of a Code-of-Conduct that is constantly under review.

Recommendation: Create a separate Mathematics Education Department in each State with a mathematically trained Minister assigned to assigned to this one Department only.

iv. the use of working visas, particularly in insecure, low paid, unskilled or semi-skilled jobs and trades;

There should be no unskilled workers in Australia, all should receive an adequate education. As it may be difficult to expel participants from a given course, Harassment techniques may prove successful in causing unwelcome students to misbehave and then drop out of classes.

v. allegations related to the exploitation of vulnerable classes of workers including working visa holders, young people, the under-employed and migrants;

v-1 Under-employed people such as extremely talented Australian Aboriginals are particularly vulnerable to exploitation and this commences in the classroom. Our Maths textbooks contain the mathematically, scientifically and historically false “1, 2, 3, many” statement. One day old babies can count to three, ants have an odometer and Plato proved with his Slave Boy experiment that Mathematical Ability is innate in the human species.

v-2 Traditional Aboriginal Maths was excellent and Mabo recognised that “the Lore up there is the same as the Lore down here”. The returning Boomerang is far-and-away Australia’s most innovative invention, with the Woomera (my spell-checker does not even recognise this word) perhaps being in second place. While other countries invented curved throwing stick, some of which may have returned, the Australian Boomerang with its complex aerodynamics captivated the world and was used to test aerodynamic theories around the world in the early propeller days. The ‘fact’ that European mathematicians had proved that heavier-than-air-flight was impossible was irrelevant.

NB: New Zealand, which has produced top-class mathematicians, is on the Scientific American’s list of innovative countries and Australia needs to catch-up. The way Australia teaches Indigenous Maths may be economically disadvantageous to Australia and may breach several International Human Rights Conventions and several International Labour Organisation Conventions

vi. the impact of insecure work on workers, their families and relationships, and on the local community, including financial and housing stress; and

It is extremely difficult to plan a future and family while house prices are so extraordinarily high relative to the wages of insecure young workers. This can have a disastrous effect on Australia’s long-term economy, despite assurances from well-paid officials that such marginalized people may be safely ignored. Indeed some advice from well-paid officials may puzzle our business leaders.

vii. the impact of insecure work arrangements on vulnerable workers including young people, the unemployed and under-employed, migrants and short term visa holders.

2. The nature and consequence of insecure work arrangements in the ACT, including but not limited to:

i. the legal rights and obligations of group training organisations, labour hire companies, host organisations and employees, along with any ambiguity that exists between these entities;

There has been a sharp movement towards a training-for-profit mindset for group training organisations, with repeated media stories about poorly qualified teachers who use inadequate materials to train students. I discussed the situation of one such organisation (Axxx) with a person from ASIC. The ASIC person was totally unaware of the existence of the Axxx-organisation despite the fact that media reports were showing that it was under administration.

NB: This is not a criticism of ASIC as it used to do excellent work until it was 'redesigned' although I am unsure just how effective the new version is. A random individual who picks up the phone cannot be expected to be across every administration-situation.

ii. *the effectiveness of existing industrial relations laws and instruments and their ...;*

iii. *the impact of poor practices, including but not limited to workplace health and safety ...; and*

iv. *the impact on long-term workforce needs of replacing permanent employees, apprentices and trainees with casualised labour hire workers.*

iv-1 Casualised workers can be an issue in industries that depend on having a reliable and well-trained work force. I normally work on a casual basis and this can work quite well – until the tax laws change. **Quote** from an attractive international student: "I wish I could get a job that's legal". **Quote** from AFP "Trillions of dollars in extra debt and we've got nothing to show for it". Who's responsible?

Quote from a well-dressed Bondi mother: ***"What about the future for my children? There's no jobs, no inheritance. That's what you have to tell them"***.

iv-2 AI Robots are replacing some jobs and some strategies may be based on overly dramatic sales techniques. On the other hand, I am using a 'robot' to experience a new dimension in music and there are many potential benefits for our society.

iv-3 I designed a soft AI product in the 1980's through to the 1990's and it may have been a forerunner to the Search Engines we all use these days. I am currently designing a new soft AI product that could provide economic benefits for Australia and perhaps help us into the Scientific American's list of Innovative Countries. The Wright Brothers struggled to find support for their invention and my soft AI product may experience a similar fate.

iv-4 Computers and other machines have been replacing people for a long time. An example that used to be used related to the high quality, low-cost work people in the typing pool used to do. Additionally managers were able to identify the workers who wrote town documents. Nowadays each person has their own computer in an expensive network and the quality of the resulting documents is often lower. **Work that ladies enjoy must be a priority! We can train everyone.**

Recommendation: Establish an Anti Corruption Department in each State with and ABS and powers to question Federal and State Ministers as well as CEO's of major corporations. Ladies worry about their kids! I ask officials "Where has the wealth gone?" and the shamed reply is "It's not my job".

*** End of Report ***