

Journal Comment

We have a Problem?

I start my Journal Comment with the iconic phrase: 'Houston, we have a problem'. Those with good memories might just recall that these were the words spoken by astronaut Jack Swigert during the aborted Apollo 13 moon mission, when he reported to ground control an under-voltage on the capsule buss. At least that's what I recall he said.

Something in the back of my mind suggested that it might just be prudent to check the correctness of the quotation. The words were actually spoken by Kevin Bacon who starred as Jack Swigert in the movie 'Apollo 13'. What Swigert actually said was: 'OK, Houston, we've had a problem here'. Close enough – I prefer the movie version!

And why exactly is this relevant? It's because we have a serious problem in South Africa, to which I expect the obvious retort: 'which one in particular are you referring to?' Now, now, this really is serious!

Those who read my Journal Comment will have noticed that I always start in a light-hearted way, but then move on to a serious matter. This particular topic came to my attention when I read the abstracts of the upcoming papers to be published in the *Journal* – and this Comment is no different. The paper that pricked my consciousness is 'The geoscience education pipeline in South Africa: issues of skills development, equity, and gender' by Ann Cameron of the University of the Witwatersrand, and the problem is the state of education in South Africa.

The problems of our education system are manifold, starting at the very bottom with access to books, overcrowded classrooms, schools without flushing toilets, and rising to high-level questions around the value and appropriateness of outcomes-based education when most students do not have access to libraries and computers, and the poor standard of science and mathematics teaching at secondary level. At tertiary level, do I have to say anything more than #FeesMustFall?

In the run-up to the World Economic Forum Africa 2017 in Durban the former president of Tanzania said that 'the education crisis on the continent was today's civil rights struggle', and that education standards in middle-income countries lagged high-income countries by as much as 70 years.

'Inclusive Growth' of the South African economy (to use a catch-phrase of the WEF meeting) will not be achieved by nationalizing the banks and mines, nor by threatening to shut down mining operations because they do not meet unreasonable and unattainable targets set by the 2016 Mining Charter, upon which there was little or no consultation with the industry. I fully understand that the mining industry must transform, and requiring an ever-increasing percentage of procurement spend with BEE-compliant companies is both necessary and praiseworthy.

But let's not kid ourselves – issuing shares to a minute percentage of the population who happen to be employed by the company, or live in the surrounding community, or who are someone's favourite entrepreneurs, might assist in transforming the industry (providing, of course, they do not sell their shares), but will hardly create inclusive growth of the economy. And the plea at the WEF for increased fixed investment in SA will continue to fall on deaf ears when regulatory uncertainty in the MPRDA and Mining Charter drops our ranking ever further in the Fraser Institute Survey of desirable countries for mining investment.

What will assist in creating an inclusive and growing economy is improving and levelling, to however small a degree, the unequal educational system so that every school leaver has a chance to sell his/her skills and ability into the marketplace. I have no doubt that there are many dedicated and selfless educationalists who are doing their utmost to improve the standard of teaching of our children. However, it surprises me that we only hear about education at year-end with the Matric results, or when the on-line registration of new learners crashes (it didn't on the second of May this year!), or when there is some scandal over cyber-bullying, or misappropriation of money, or sexual abuse of children. Why is the quality of education not high in the public discourse – continually? And why does it require the former president of Tanzania to bring to our attention the obvious crisis in our education system?

We have seen, over and over again, that when they invest effectively in the education of their children, counties without natural resources invariably outperform those that are well-endowed. I use the word 'effectively' with deliberation, because that is where we, as a nation, fail.

And so we come back to the interesting paper on skills development in geoscience education, highlighting the critical need for managerial skills, not just technical knowledge, and the call for curriculum adjustment to meet these changing needs. I can't wait to read the full paper! I give my apologies to the authors of the other papers in the June edition of the *Journal* in that I do not have the space to discuss the implications of their excellent research. For the mining engineers there are five papers that deal with seismic activity, rock fracture and stress, and electronic safety equipment. For the metallurgists, there are five papers covering solvent extraction, flotation, coal characterization, resource estimation, and (my personal focus) geoscience education.

I started with Apollo 13, and I end with Hidden Figures – go figure! Enjoy reading the papers in this month's *Journal*.

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