
SOUTH AFRICA: Decline in PhD numbers a major problem

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South Africa's inability to produce enough doctoral graduates to build the 'knowledge economy' it aspires to, or simply to replace the existing cohort of academics in the higher education system, is a challenge widely acknowledged by government departments, their agencies and universities. But fixing the problem is a lot harder.

According to Professor Johann Mouton, director of the University of Stellenbosch's Centre for Research on Science and Technology (CREST) which has conducted a five-part study on the PhD, part of the solution lies in making more money available to doctoral students to enable them to pursue their studies full-time.

Currently about 80% of South African doctoral students are part-time and generally take far longer to complete their degrees than their European or American counterparts.

But the situation also calls for clearing a string of blockages to postgraduate study in an educational pipeline that goes back to high school level, and probably even beyond. "Our problem really starts with the low number of matric [school leaving examination] exemptions, and too few good passes in maths and science," said Mouton.

Then there is the problem of student poverty and debt. "We produce about 100,000 bachelor graduates a year but the majority of those need to start working immediately to pay off debt," Mouton told *University World News*.

Thus, the number of potential researchers is whittled down at each level of the system. Out of about 22,000 South African honours students, those pursuing masters and doctorate degrees amount to only 10,000, of which just under 1,200 (1,182 in 2008) end up graduating with a PhD, said Mouton. Among the masters cohort, nearly one third is made up of MBA (Masters of Business Administration) students who rarely remain in academia.

Mouton said one of the biggest blockages in the pipeline manifested itself in the absence of sufficient numbers of black South African masters students. This lack, he said, was significantly hampering the transformation of the higher education sector.

"From a transformation perspective it's a problem. We need to broaden the base."

Mouton said that while participation rates of white and Indian students as a percentage of those populations was probably comparable to participation rates in Europe, most black students who managed to get through their undergraduate degree simply did not make it through to postgraduate level.

Statistics show that, overall, South Africa is producing doctorates at only one eighth of the rate of the European Union in the 25 to 34-year age group. According to Mouton, South Africa was also unable to compare itself favourably with developing countries such as Brazil, Russia, India and China which were, he said, "well on their way" to becoming knowledge-driven economies.

He said despite the setting of national PhD number targets by the National Research Foundation (NRF) and the Department of Science and Technology - 6,000 a year by 2025 and 3,000 in science, engineering and technology disciplines by 2018 - plus national initiatives to support these targets, total numbers of doctorate graduates had in fact shown a slight decline over the past few years.

"We are simply not growing our numbers," he told *University World News*. "All the statistics are against us. At our current rates, there is no question that by 2018 we will not be able to come close to those targets."

Mouton said the problem of a lack of PhDs in South Africa not only held consequences for national innovation and economic development. "Yes, we need scientists and researchers - any competitive knowledge society does. But PhDs are also very important because you need a doctoral graduate to train the next generation of academics," he said.

Only around 40% of South Africa's 18,000 full-time academics have PhDs. "We need to replace them, but we're not even doing that. We are never going to be able to reproduce the academic system at this rate. This is a real problem."

In this context, Mouton described the growing number of South African PhDs being awarded to students from other African countries as "a good trend", although not a long-term solution.

A recent national newspaper article reported that the proportion of PhDs being awarded in South Africa to foreign students, mostly from African countries, had increased from one-tenth in 2000 to one third more recently.

"No-one should be concerned about the high rate of foreign PhDs *per se*. Wherever we can find them, we should be recruiting them," he said.

Mouton said most of his best students were drawn from African countries outside of South Africa. He described them as "high-quality students, who are dedicated, hard-working and seem not to be so keenly driven by the culture of materialism characterising the current generation of students."

"If not for this growth derived from foreign students, our numbers would be worse. But it's not a long-term solution," said Mouton. "The real point is that we are not growing our own timber."

He said the obvious solution would be to leverage more funding from government to support postgraduate supervision, and to fund full-time masters and doctoral scholarships.

"Everyone recognises this," he said. "The NRF currently offers R60,000 (US\$8,250) over three years, but that's way too little for full-time study," said Mouton.

As a result, most South African doctoral students who have completed their degrees part-time are fairly mature - often in their 40s - by the time they graduate. "That's not productive for the economy," said Mouton. "But there's no money in the system to give doctoral students a scholarship to finish three years and go straight from their masters degree."

He said NRF attempts to secure more money from the Treasury for full-time scholarships had failed in the past because academic scholarships were not regarded as a sufficient national priority.

The result was that top universities, such as Stellenbosch, were now being forced to implement the highly expensive option of offering full-time doctoral bursaries to attract students, creating "huge competition" among institutions for good doctoral candidates.

"That's our big challenge. If we don't increase the number of students who want to stay on for doctoral studies, I'm not sure how we will turn the situation around," he said.