

**COVID-19 and the academe in South Africa: not business as usual**

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The famous R.E.M. song laments "*It's the end of the world as we know it, I had some time alone, I feel fine...*". Many South Africans would agree that it is indeed the end of the world (or business) as we know it, and through the lockdown we have certainly had some time alone; but contrary to the lyrics, all may not be fine.

The coronavirus has impacted every economic and social sector<sup>1</sup> across the globe, including Higher Education in South Africa. All students and staff at Higher Education Institutions (HEIs) will have been affected in various ways and to varying degrees; not one person will emerge from this unscathed. It is impossible to predict all the short- and long-term impacts of the COVID-19 epidemic, but we will experience the aftershocks for some time to come. Here we discuss some of these impacts, from undergraduate level to large research projects, and offer some suggestions on how to mitigate some of the damage.

At undergraduate and Honours level, several higher education institutions have had to scramble to place study material online for students. Out of necessity, contact universities have had to develop innovative and flexible ways to offer theory and practical components to students, and find alternative forms of formative (and most likely summative) assessment. However, staff at contact universities typically have little experience or training in the pedagogy or delivery of online learning. Thus, academics with teaching responsibilities will need time to familiarise themselves with online learning, and some online teaching techniques come with more increased administration. The #feesmustfall protests of 2015 may have prepared some faculties / universities hardest hit by earlier student protests, but the total shutdown of almost all sectors of society presented challenges not experienced during this period. In addition, some universities in South Africa were negatively impacted by staff or student strikes at the start of 2019. Nevertheless, an encouraging aspect of this exercise is that many academics seem to be interrogating their curricula and moving away from rote learning to focus on critical thinking and applied understanding using a holistic approach, as traditional assessment techniques are no longer viable. But in a country where a large percentage of students depend on financial assistance to make ends meet, where data costs are high and thus not readily available to all, and where devices such as laptop computers are seen as a luxury, it is not surprising that contact universities have faced push-back from students who argue that universities cannot expect them to continue with online learning without the necessary resources<sup>2</sup>. To address this issue, universities have negotiated with several cellular networks to make data available to students (at a cost to the university, thereby forcing universities to reshuffle their financial budgets or asking the general public to donate to discretionary funds), and various universities are providing devices to disadvantaged students. Also, a limited number of educational websites have been made data-free to students, although the largest

online platform (Blackboard Collaborate) is not hosted in South Africa and, therefore, cannot be accessed for free. Notwithstanding all these efforts, they do little to help students in remote areas where electricity supply is inconsistent and network coverage is poor. It is also pertinent to highlight that not all university staff have proper access to the internet at home or laptops on which to work due to not owning one or having to share with a spouse or with children that are home-schooling. In particular, historically disadvantaged universities in rural areas have few resources to support students. Even better resourced universities, such as the University of South Africa, which is an open distance learning institution and ideally suited to address the challenges that this pandemic presents, has had to grapple with making laptops available for staff and devising mechanisms to run its internal operations and administration remotely as well as find alternatives to traditional sit-down examinations for hundreds of thousands of students during the COVID-19 pandemic. A notable number of courses have switched from traditional sit-down examinations to continuous assessment; however, large classes (sometimes in excess of four or five hundred students) in many faculties renders this form of assessment difficult and its administration near-impossible. In addition, many disciplines require compulsory experimental training to complete professional courses or retain accreditation with international bodies; these activities remain prohibited under lockdown. Here, the answers remain elusive.

Much consideration has been given to moving content online and one may even argue that this is where universities have focussed much of their attention, and rightly so, but the neglected elephant in the room concerns the broader impact of COVID-19 on research (including postgraduate students, meeting research output targets, submission of new grants to secure the next cycle of research, and also research funding and project deliverables) in South Africa. What the impact will be on South Africa's overall research output remains to be seen. Some research<sup>3</sup> argues that academics have more time for research during lockdown; data sheets are being taken out of the proverbial bottom drawer, dusted off, and turned into publications. However, the outcome here will be unique for every person. For example, working under heightened anxiety may limit research productivity. The productivity of academics with children may especially be impacted as they need to juggle childcare and work in the same household. Other research<sup>4</sup> suggests that women's productivity is likely to suffer more than men's during the pandemic because, even in many higher earning households, women remain the primary caregivers and, as such, childcare and home-schooling fall predominantly on their shoulders. On the other hand, the psychological effects of enforced solitude may be severe for those having to isolate without a partner or family. Equally, early-career researchers may be more affected by the lockdown than more senior researchers with established laboratories<sup>5</sup>. Essentially, these examples illustrate that we live in a complex world

with wicked real-world problems, and that the experiences of students and staff during the COVID-19 pandemic cannot be generalised; therefore, it is inappropriate to focus on any one group as being more or less vulnerable.

Many research projects will be compromised by lockdown and social distancing regulations. It will affect (in some way or another) many, ranging from the Honours student who now has no access to a laboratory on campus to run their experiment to the A-rated scientist who will struggle to achieve the objectives of funded research and may fail to meet international obligations due to, for example, the inability to conduct field or laboratory research. While academics from the natural and physical sciences will mainly be affected by the lack of access to field study sites and laboratory facilities during lockdown, many social scientists may be affected far longer as strategies such as social distancing persist. Social science research often relies on interviews, focus groups, and survey questionnaires; thus, these researchers face the risk of exposing themselves, or the communities in which they work, to the coronavirus but, more importantly, predictions suggest that many poorer communities will be hardest hit by the virus; therefore, in the aftermath of the COVID-19 pandemic, they may not wish to participate in research, even after the pandemic and life has returned to the "new" normal. On the other hand, the COVID-19 pandemic may also present opportunities for research, particularly for social scientists. The proliferation of research, disseminated through preprints, provides is another example of how COVID-19 has impacted research<sup>5</sup>. In several instances and where possible, post-graduate students and researchers must be innovative and think outside of the box in terms of running experiments and collecting data. One example is using remote sensing methods to collect data for long-term monitoring studies or working on older datasets to mine all the information from them. Other examples are for post-graduate projects to be redesigned to work on online or existing datasets or possibly including literature reviews as chapters in theses.

The over-riding point is that academia, including researchers and administrators, and related bodies such as the National Research Foundation (NRF), should be conscious of the impacts on all academics and students, and devise strategies to facilitate the research of all who will be impacted. Academia as a whole needs to be cognisant of the plight of all researchers and be careful of claiming that specific groups are affected more than others, since how individuals experience this period will be highly individualistic. This pandemic is affecting everyone, and it is up to academia to show compassion during this difficult time. Field and laboratory experiments may fail, collection of data in long-term studies will suffer, and the submission of grant applications may be impacted. But what can (and should) be done to benefit the entire research community? What mechanisms and strategies can HEIs and the research sector put

in place to facilitate the continuation of research and save the aspirations of students and staff alike?

Strict time frames to completion are imposed on postgraduate students, both by the NRF through the number of years that a student is financially supported and by universities that require motivations from students who are unable to complete their degrees in the allocated time. Students whose research can be conducted online or is conceptual, or whose data have already been gathered may be less affected by the lockdown. However, students that still need to collect data in the field or perform laboratory experiments will experience significant challenges to complete on time. Where fieldwork is season-dependent, students may lose an entire year. A case in point concerns students that work in the South African National Antarctic Programme, where the annual Marion Island Relief Voyage was cancelled (only emergency personnel are partaking in the reduced voyage). Unless a second voyage can be scheduled for later in the year, students will lose an entire year's data. Long-term datasets that have continuous sampling for several decades will suffer. The NRF and various universities should carefully assess requests for an extension in student support (there would be cost implications, but the long-term benefits would outweigh the costs). These 'costed' extensions are urgently needed, particularly for post-graduate students in South Africa<sup>6</sup>. Simply deferring student registrations may not be the most sensible option as numerous students will disappear out of the system (the leak in the pipeline will increase notably) as the background and socio-economic circumstances<sup>7</sup> may simply not allow students to spend a year idle and re-enter the pipeline next year.

The majority of NRF grants are cyclical; unspent money is returned to the NRF at the end of each year. Where projects are in the middle of a cycle, researchers can motivate for a carry-over of unspent funds (although there are some financial rules in place which should be re-examined carefully in light of the COVID-19 lockdown). In addition, where projects were due to end in 2020, careful consideration should be given to allowing a project to extend for another year to allow for the meaningful completion of such projects (the so-called no-cost extensions being considered by the Royal Society and the Wellcome Trust, the German Research Foundation as well as the Swedish Research Council). This is especially true for projects that require field-based work, or projects that involve foreign partners where international travel may be impossible for months or even for the remainder of the year. Travel bans will also prevent international conference attendance where the latest research is presented, and networking provides opportunities to set up international collaborations. Collectively, working from home during lockdown, heightened anxiety, travel bans coupled with countries coming

out of lockdowns at different times may also affect the number of local and international (as part of larger multinational collaborations) grant applications that are submitted.

Another possibility to explore is extending deadlines for grant proposals. In South Africa, as elsewhere in the world<sup>8</sup>, the NRF extended its closing date for the One Call from 30 April to 15 May, but this was done after the internal closing dates for most of the institutions, and as such, the benefit of this extension sits with the designated authorities at universities, allowing them more time to screen and provide feedback to their own researchers. The German Research Foundation (DFG) provides a novel alternative because most of its funding calls do not have a deadline and may be less affected going forward. The NRF should perhaps consider a second funding call in September or October, once they have had time to scrutinize the data around how many researchers submitted funding applications during the 2020 One Call. In addition, a reallocation of some existing subsidies to universities should be considered. For example, HEIs that pay out publication subsidies from the Department of Higher Education and Training directly to academics should rather retain these funds to help researchers support their own research and fund post-graduate students<sup>9</sup>.

If this pandemic is to teach us anything, it should be that academics must be innovative in the way we do our science and facilitate learning as well as be compassionate to fellow academics and students. Several research groups have set up platforms of communication (e.g. Zoom, WhatsApp, Google Group) to remain connected, plan research and maintain group morale while working remotely<sup>10</sup>. Now is the time to forge strong supportive collaborations, where South African researchers stand together and support one another, particularly in light of possible austerity measures in the future<sup>11</sup>. Collectively, we need to ensure the well-being of our colleagues, of our postgraduate students who fear that they may not complete their degrees on time, of our undergraduate students, many of whom feel rudderless. And foremost, we need to safeguard our own mental health.

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