

Appendix 2

Responses to the presentation of preliminary findings from the Study on the Doctorate in South Africa (May 2014)

The aim of the seminar *The Doctorate in South Africa: Policies, Discourses and Statistics* was to discuss the framework of the four different pressures or discourses on doctoral education: growth, efficiency, quality and transformation. The researchers also presented a slice of the data and short reports on the qualitative study of departments in the social sciences and humanities that produce above-average numbers of PhDs, and a national survey of supervision practices.

The research group invited a number of responses from experts who are familiar with the South African higher education context and have themselves been involved in PhD supervision. Professors De la Rey and Badat are both former chief executive officers of the South African Council on Higher Education. Dr Butler-Adam, a former deputy vice-chancellor was the Ford Foundation Programme Officer who funded this research project. Professors Moja, Langa, Stensaker and Maassen are involved in doctoral education in their own countries and internationally. While the first three commentators are mainly focused on the research project itself, the latter four are more concerned with different approaches to doctoral education.

Cheryl de la Rey

Former CEO of the Council on Higher Education and Rector at the University of Pretoria

Over the past year, there have been several workshops or seminars in South Africa focusing on the doctorate. This is a reflection of a worldwide trend putting the spotlight on PhDs and their production. This increasing

awareness and focus on the production of the doctorate arises to a large degree through the perceived link between PhDs and social and economic development on both a national and regional basis.

With respect to policy in South Africa, we have had – and will continue to have – opportunities to discuss the *National Development Plan 2030* (NDP) and its prioritisation of growth of PhD production (NPC 2012). This same emphasis is also reflected in the recently finalised *White Paper for Post-School Education and Training* (DHET 2013b), and in programmes run by the National Research Foundation (NRF) and the Department of Science and Technology (DST).

Major debates around the PhD

When we look at the PhD as an issue, we find that there are two main debates:

The developed world and the overproduction of PhDs

Many countries are producing more PhDs than can be absorbed by the higher education sector or by the broader economy. This is particularly evident when one looks at the demographics of European countries and North America. Cyranoski et al. (2011) also pointed to the example of Japan.

The developing world and a focus on ramping up the number of PhDs (as is the case in South Africa)

The question of absorption into the economy is getting much less attention here than in the developed world. If we look at China and India as examples of developing economies that have dealt with the consequences of successfully ramping up PhD numbers, the issue of absorption is somewhat different. In these situations, the debate is more about whether there is accompanying expansion in employment of academics in line with increased student enrolment. It also relates to the absorptive capacity with respect to the expansion of the economy. In China and India, there is evidence that there has been increased demand for PhDs to match the increase in infrastructural development.

But the issue is also about quality, not just quantity. So we need to look at what quality is as well, and what this means in relationship to the doctorate and its purpose, both currently and in the future.

If we look at the NDP, there is a clear assumption that the doctorate is linked to economic growth. This is different to what we have been socialised to expect, which is that PhDs feed into academic-sector employment. Increasingly, the public and private sectors in South Africa are stating that the doctorate is a requirement for certain positions.

The literature often mentions the case of Germany, which is sometimes referred to as using the approach of the ‘progressive PhD’. Germany does produce the highest number of PhDs in Europe, but they also look at the problem of oversupply and make changes to match PhDs to economic needs. As an example, a number of German universities have made structural changes in order to embed transferrable skills within their PhD courses. Looking at examples like this can shift our traditional perceptions about what the PhD’s purpose is.

The key issues to consider are that the debate is not just about numbers. We also need to look fundamentally at the nature of doctoral education and the tradition we subscribe to. We are at a point where we must ask whether we have a tradition that will serve the assumptions of policy-makers and funders: that increasing the number of PhDs will have a positive effect on social and economic development.

The big question on the table is about the nature and purpose of the doctorate and specifically the PhD. At the very least, we should be critical about the taken-for-granted assumptions in the growing literature about the PhD. Nico Cloete, director of CHET, has pointed out that we still need to interrogate the evidence to show a direct link between PhDs and a certain kind of economic growth. At the same time, it’s this ‘certain kind of economic growth’ that I think we need to problematise. This relates to our core question: What do we mean by development and how does the PhD connect with development?

The McKinsey report (on Africa and its future horizons) that was published a few years ago presented scenarios for economic growth. This growth was based on very specific indicators. Looking at development today, one of the key issues we are struggling with is not only the positive consequences of economic growth as measured by those indicators, but also the growing joblessness within our societies. This brings with it the need for us to look at alternative models. One way of looking at development in Africa is to look at the degree to which it provides access to opportunities, resources, human rights and social justice, rather than measuring purely development in economic terms.

In one of the lectures that I heard recently as part of a series looking at 20 years of democracy in South Africa, Professor Maxi Schoeman, head of the Department of Political Sciences at the University of Pretoria, argued that the crisis we face currently is not a crisis of leadership as vested in certain individuals, but a crisis of imagination about the future, and a crisis about imagination about the future of Africa. I think this speaks to our concerns here about what we assume the role of the doctorate in Africa to be, and its link to disciplines and different knowledge domains.

In looking at the role of the PhD, many of us share the perspective that the PhD provides an opportunity to produce new knowledge and innovation.

This is essentially about producing individuals who think imaginatively about the future of something. But that process of thinking imaginatively doesn't happen in the same way across all knowledge fields.

What are the implications of this project?

How do we make sense of this project and its implications? One of the ways to look at the project and its implications is with reference to three different levels of analysis: the national, regional and systemic level; the institutional (university) perspective; and the individual level of supervisors and students. These levels are obviously interrelated and I will discuss each level and the interconnections.

At the national, systemic level, what is our assumption about the PhD when we talk about ramping up numbers to 5 000 and beyond in South Africa, and ways in which we are considering doing this? One could argue that if PhDs in social sciences, humanities and the arts are about imagination and the thinking individual, you could never have too many PhDs. Oversupply only becomes an issue when we think about the role of PhDs in very particular terms. Of course we don't have an absolute answer to this issue of numbers. However, the link between the number of PhDs and conceptualisations of what development means in the African region is critical.

This also brings us to considering the historical evolution of universities in Africa. One of the learnings I remember from doing my own PhD is going into the archives to understand something about the history of universities in South Africa, and realising that early debates about the introduction of social sciences were all about how the authorities could best manage the 'natives'. So that is the tradition we have to think about. This reveals something about where we come from as universities, what the role currently is and what may require rethinking.

By and large, we have worked from the assumption on this project that **universities** are the sites for doctoral education. For the most part, this is an assumption that holds; but we need to remember that, structurally, it doesn't have to be that way. We could also consider national contexts where specific institutes have been created to produce PhDs. It unlocks a few things if you start thinking about a different institution established with a different purpose as opposed to our universities, which for the past 100 years have been mostly concerned with undergraduate teaching and are now expected to meet a different purpose. There is a link here to looking at the historical evolution of universities because most of the universities that we recognise today in South Africa can be clearly linked to colonial authorities and what happened in the postcolonial era. This point applies not only to the national level as a unit of analysis but also to the institutional

level of universities and other HE institutions. For instance, in South Africa we have had many discussions where we have talked about our research institutions (such as the Council for Scientific and Industrial Research [CSIR] and the Human Sciences Research Council [HSRC]) and which role they may play in doctoral studies.

When it comes to the individual level, the self-evident way to connect this is by thinking through the public and private benefits of higher education. We have the evidence that PhDs bring a number of private benefits. But we are still grappling with the public benefits.

Nico Cloete has raised the issue of more funding being required. This is a topic that could constitute a whole new research project. Funding is a very significant lever in all of this. This is because what we see across the data in South Africa is a clear positive link between a change in the funding framework and a change in research output and in PhD enrolments and graduates. In looking at the three steering mechanisms most commonly used by government as policy levers (planning, quality assurance and funding), funding is clearly very powerful in influencing behaviour. Funding shifts behaviour at the institutional level as well: we've heard how institutions are paying supervisors or how incentives are used. At a completely different level of analysis we can see how funding influences behaviour. It also influences the behaviour of students. We haven't detailed this as part of our study, but how fees are levied or waived, and how scholarships and bursaries are awarded, are significant factors that shift enrolment and doctoral patterns. If we were to look at how Stellenbosch University's performance at doctoral level has been able to jump up so significantly in so short a time, I would speculate that there's a clear link to funding.

The other issue that was raised about the purpose of the PhD and its role was: do we use it at an institutional and systemic level, but particularly within the sector as a proxy for something else, such as quality, or for achieving something else out of the system such as differentiation? We must come back to this important question.

Looking at the policy context and the role of universities in particular, our discussion of the role of the university in a knowledge economy reminded me of the debate about the role of the university that unfolded four decades ago. Over time this evolved: we looked at the 'engaged university', the 'entrepreneurial university', innovation as a concept, and science parks. Today we find ourselves looking at the concept of the 'university for development'. This shows that there are larger contexts in which we must think about doctoral training and the contribution it may or may not make in Africa.

It was interesting during the course of this project how often the notion of the 'PhD factory' came up. It is a concept worth thinking about. If we

start critiquing and disaggregating it, it foregrounds a number of issues that manifest the tension between quality and quantity, and raises questions about the nature of the PhD: is it to develop the thinking individual, new knowledge, and so on?

At a national level, we can see the notion of a PhD factory at work. Our funding regime sets up the PhD factory when we have to fill in our HEMIS data. We have a situation that might be quite contradictory, in that at the same time as we talk about the quality of PhDs, others amongst us (who lead institutions and are heads of planning departments) have to count numbers. There's a trade-off to some extent. For example, when we talk about models, we may argue for replacing the traditional, old-fashioned model of the PhD student working in the library for six months with the natural science model; but, to a large degree, the natural science model in large institutions is not concerned with generating thinking: it's very much like the PhD factory. You work within a project; you get your specific question; a triangle is set up with the principal investigator, five postdocs, 20 PhD students, 40 masters and hundreds below that. This triangle leads to the production line. At an institutional level, we have to ask what the proportionality is that we are looking at and where the space for a different model is. The liberal arts model – the thinking individual and the PhD that cultivates imagination – asks how we establish a national system that has space for all of this, not just one or the other.

We haven't said very much about the changing nature of the knowledge landscape itself and how the discussion about trans-disciplinary work relates to models of PhD and PhD supervision. We have talked today about models in relation to the number of PhD graduates rather than what kind of knowledge we need for the current context. If you train PhDs who can only work on expensive laboratory-based equipment, the only option for them after graduation is to go to Europe and North America. Are there ways in which we can think about our context differently and still embed quality?

I will now look at the question of quality and why we didn't tackle it directly in this project. Early on, we debated how we would assess quality of PhDs. One way we thought of doing so was to read completed PhDs because we wanted to distinguish between scholarship and technical completion of PhDs. But we couldn't agree on which methodology to use. The best proxy we had was looking at examination regimes. But is that a good proxy? This question remains unresolved.

I want to conclude by saying that the fundamental issue is how we see development: the role of the university and higher education as a whole in relation to a system of African development, linked to the PhD and what we expect of it. I had the privilege of listening to Ben Okri recently when the University of Pretoria awarded him an honorary PhD. He talked about the

importance of people who can imagine. And I found myself asking the question, 'Are these graduates in the hall people who can imagine for the future of Africa?' For me, that is the fundamental question.

Saleem Badat

Former CEO of the Council on Higher Education, former Vice-Chancellor of Rhodes University and current Programme Officer of The Andrew W Mellon Foundation

I will offer my observation on the project under three headings, which draw on the three keywords in the title of the book – discourse, policy and data.

Discourse

The study's engagement and critique of the major debates on the doctorate will add to the contemporary discourses on the PhD. Whether it remains at the level of critique or advances a coherent alternative discourse, will, according to the authors, be discussed in the concluding chapter. If an alternative discourse is advanced it will hopefully address three issues.

First, it will not simply take the demand for more doctorates in South Africa as a self-evident good, but critically interrogate this clamour. Here one is reminded about the 1980s skills shortages discourse – which, it was argued, was actually a metaphor for bringing about certain kinds of ideological changes and restructuring in the economy. So too with the doctorate discourse – or not?

Second, notwithstanding my first point, it will hopefully make, not an impassioned but a cogent and compelling *case* for the doctorate and for greater policy and financial support.

Third, like many others, the authors, surprisingly, given who they are, elide an important issue, which they will hopefully address. This is that the case for the doctorate is entirely linked to the idea of 'high-level skills' linked to the 'knowledge economy', economic growth and expanding or reproducing the academic workforce and ensuring that it is of much higher quality.

It is evident that the competition for and concentration on economic advantage means that today certain kinds of knowledge and research, especially that generated by the natural, medical and business sciences and engineering, are privileged. The arts, humanities and social sciences are the objects of either benign tolerance or neglect. However, as has been argued in relation to Africa, 'attempts to improve Africa's prospects by focusing on scientific advances and the benefits accruing from them have all too often overlooked the important perspectives which the humanities and social sciences afford'. It 'is vital that the social sciences and humanities

are granted their rightful place ... if Africa's development challenges are to be fully and properly addressed' (Mkandawire 2009: vii).

At the same time, elsewhere, Mkandawire cautions against a 'developmentalism' in which research becomes the narrow instrument of 'the developmental state', and ignores various other 'aspects of our people's lives' (Mkandawire 2009).

In the African context, there is a more fundamental questioning of the arts, humanities and social sciences. Mahmood Mamdani (2011) argues that 'the central question facing higher education in Africa today is what it means to teach the humanities and social sciences in the current historical context and, in particular, in the post-colonial African context'. Moreover, what does it mean to teach 'in a location where the dominant intellectual paradigms are products not of Africa's own experience but of a particular Western experience' (Mamdani 2011)?

My raising of this issue is not about the Peter Vale/Academy of Science of South Africa (ASSAf 2011) crisis of the arts and humanities narrative being either reduced to numbers or a yearning for some non-existent past, but about the much-needed epistemological transformations that are required in South Africa – which are not unconnected to the development of South Africa, broadly conceived, and higher education itself.

At the level of discourse, there is a rather un-nuanced and also not persuasive notion that the NDP or more recent policy thinking is about a move from equity to development. I think you can read this in a more nuanced way, rather than equity and development somehow being entirely in competition. Certainly, it is important that the issue of growth/development is becoming a greater preoccupation, but equity is then linked to development, which is also a good thing, rather than entirely in terms of redress.

This has long been a strand in higher education thinking. So perhaps the authors are making more of the shift than is warranted. Nonetheless, this is a welcome return to thinking again carefully about the development/equity issue, if we also need to think more about efficiency issues.

Policy

It is not clear whether the book will limit itself to an analysis of policy, or also extend into analysis *for policy* and into actual policy proposals. I am hoping that there will be some clear policy propositions if not concrete proposals. Similarly, I hope that there will be a highlighting, with appropriate interrogation, of promising *practices* that could help to advance doctoral education and equity, quality and efficiency.

Cheryl de la Rey suggested that it is not about numbers, but about the nature of doctoral education and training and whether traditional models

are adequate or other models are needed. Indeed, we may certainly need new models but there may be a prior question. Here, I am reminded of the conclusion of the Yale Report of 1828. As Arthur Levine (2000) had quoted, ‘In the early years of the Industrial Revolution, the Yale Report of 1828 asked whether the needs of a changing society required either major or minor changes in higher education. The report concluded that it had asked the wrong question. The right question was, “What is the purpose of higher education?”’

So, to paraphrase, instead of asking whether the needs of a changing society require either major or minor changes in doctorate education, perhaps the right question is: What is the purpose of the doctorate?

I hope that the book engages seriously at the policy level with the conundrum that Karen MacGregor (2013b) expresses: ‘In order to produce more doctoral graduates, more PhD supervisors are needed: but in order to have more supervisors, more PhDs are needed’. So if this is the vicious cycle, what is the *virtuous* cycle?

Finally, what percentage of academics with a PhD have never published a peer-reviewed article or supervised a student since completing their PhD? It would be good to have this knowledge in order to temper great expectations about the necessary but not sufficient situation of larger numbers of academics having PhDs.

John Butler-Adam

Former Programme Officer, Ford Foundation and Editor of the South African Journal of Science

I have a short story to tell. It focuses on the context out of which this study has grown.

I have retired from the Ford Foundation (FF) and with us is Nazeema Mohamed who is the Foundation’s new Programme Officer for Post School and Higher Education in southern Africa. But as someone who was part of the beginning of this process at the Ford Foundation, I find it wonderful to see how this process has reached this stage of fruition.

When this project started in 2009, the FF in southern Africa had two main focuses in higher education: the development and strengthening of the broad post-school education system and, within this, supporting the emergence of the next generation of academics on an equity basis.

This particular project’s grant created the only administrative challenge I had at the FF. Having initiated the grant process, the grant leader (Cheryl de la Rey) changed jobs so the grant had to be moved to another organisation. Ford is not fond of doing that kind of thing, but it was eventually resolved.

I’m not focusing today on the document presented and on which others are commenting, but on the kind of thinking that led to this project coming

in existence at all. Why did the FF make this a grant to focus primarily on the PhD in the human and social sciences and the arts? The simple answer is that the focus of the project has always been the FF's major concern. There's always been a strong funding focus on science and health by other funders like Kaiser, Wellcome, Rockefeller and Gates. So the FF chose to focus in the areas that it believed was very important but that received relatively little funding (arts, humanities, social sciences and social justice). The grant wasn't designed to exclude science, engineering and technology (SET) disciplines, but rather to ensure that the humanities, social sciences and arts also received the attention they deserved.

From about seven years ago, the FF was also interested in a particular approach to managing the supervisory problem, and the development of a 'next generation' of postgraduate students on an equity basis. We were interested not in trying to replicate what had happened in the sciences (the lab-based approach), but rather in getting together groups of students from different disciplines into groups who could work together, in an interdisciplinary manner, on a problem area to which they could all make a contribution. The FF made a specific call for proposals in this area, to which a relatively large number of universities submitted proposals. We allocated grants with the following conditions:

- The project should include a mix of masters and doctoral students;
- There should be a core supervisor who was a real leader in his/her own field;
- The students should not lose contact with their own disciplinary background;
- There should be a good mix of participants in terms of gender and ethnicity; and
- The host university should provide a space for the project.

The grants attempted to provide support for students who were studying full-time.

We subsequently asked the Cape Higher Education Consortium (CHEC) (Nasima Badsha and Sharman Wickham) to review and assess the approach described above. They discovered that there were diverse outcomes to the grants made. For me, the most critical discovery was that this approach worked best, not surprisingly, in the universities that already had a strong research background.

Another finding that came out of that work and engagement with grantees was that, although it wasn't articulated upfront, people were very aware that they were playing a development role and made sure that their groups were diverse in terms of both ethnicity and gender.

We also realised that the process of defining what a student will do is a complex one. We have to keep looking at this to work out what gels and works well to create greater efficiency. It's also important to remember that, unless one can nurture third- and fourth-year students and encourage them all the way through the process to the PhD level, the pipeline dries up.

A final observation is that it's important not to set generic standards by which students and supervisors are assessed. Not all students enter into PhDs under the same circumstances: resources and support may differ, as does the time available to each student. Assessment must then be sophisticated enough to take account of the conditions under which students work.

Teboho Moja

Professor of Higher Education, New York University

South Africa has a history of participative knowledge generation that engages scholars in debates, as we did in the 1990s. I am glad to be part of these discussions. I find it encouraging to see us re-stimulated and engaging in debate informed by the knowledge that's been generated for the publication of a book on the doctorate in South Africa.

The knowledge that is produced and presented today is ploughing the ground for new thinking to come to the fore as we come to understand our situation, analyse the problems and search for solutions. It gives us the advantage of being informed before policies are adopted; it gives us models that might work: models that have been successful – or otherwise – elsewhere and which we may want to adapt to our needs. We have a history that includes our involvement in the production of *A Framework for Transformation* by the National Commission on Higher Education in 1996. That report remains a good example of research that informed policy and continued to frame the changes in higher education, as well as represented a platform for debate to challenge knowledge generated by looking at what was missing or what needed to be added.

Promoting doctoral programmes has become an important topic all over the world, but more so in countries that have been underproducing students with doctoral degrees. The United States produces over 50 000 doctoral degrees per year and we know that those graduates play a major role in advancing the economy of that country. The inclination from us in the developing countries is to be tempted to do what advanced economies are doing; and that is to call for an increase in the production of doctoral degrees as well. In doing so, there are a number of factors we need to take into consideration, such as the fields in which those doctoral degrees are promoted, and employment paths and patterns for graduates with doctoral

degrees so that we do not overproduce in some areas while under-producing in areas that are critical for development.

Developing countries and doctoral production: What are the issues?

Right from the beginning, it is important for us to look at two issues: the fields in which those degrees are awarded and the design of the programmes. The former issue is important so that we can be cautious that we don't overproduce them in the same way as happened with BA degrees in humanities. Where I teach at New York University (NYU) our students seem to get jobs very quickly upon graduation but there are doctoral students who remain unemployed or underemployed upon graduation. They end up taking jobs as adjunct teaching staff at several institutions and are therefore underutilised. We need tracer studies that look at how long it takes some doctoral students to get a job in line with their qualifications. The frustration of not getting suitable jobs leads to students opting for jobs that are not in line with their qualifications – and that is a waste of resources.

The second issue has to do with the way our doctoral programmes are designed and offered. On the processes and models for producing doctorates (with reference to Johann Louw's Chapter 6), the question to raise is whether we are interrogating the models we are using at all. Or is our starting point acceptance of the models currently in use for producing PhDs? I'm not trying to take us back to the 1970s where we looked at the African university and its relevance in Africa. But I would like us to look at the literature on different models and types of doctorates that are emerging as well. One example to point out that is used in the UK is that of accepting three scholarly and peer-reviewed publications for assessment in the place of a PhD thesis in order for a degree to be granted. What I'm hearing today is that we are still looking at models that were transplanted to South Africa many years ago. Within inherited models, we need to interrogate even the process embedded in those models. I find the process involved in admitting students to doctoral studies so discouraging that it makes us lose many potential candidates who are intimidated by the process of writing a proposal. A cooling-off period for additional assessment prior to entry into the programme – in the form of a pre-admission year – is a good idea that we should explore more. This would allow for students to opt either to exit or go forward and generate a proposal needed for admission to a doctoral programme.

International models to consider

The dominant individualistic model – where producing a PhD is one-on-one work – has been mentioned. Where I work (at NYU), as supervisors we

work collaboratively from the point of entry into the programme, being the admissions stage. The process involves team screening and reading of all applications before we agree on the selection of students to be admitted. We also agree on who will provide the initial supervision to the student. The student decides afterwards who will supervise his or her work or the supervising professor decides based on work done by the student. Each student works closely with all three professors and, at the end, the work is assessed by an additional two reviewers before the student is passed for graduation.

In most programmes at NYU, there are other strategies that help students to progress. For example, we have set up four milestones to producing a PhD:

- Coursework to embed the students in the literature in their field;
- Producing a literature-based paper (candidacy paper), followed by review and final selection for PhD. This allows them to really ground themselves in literature and to see how the subject matter has been addressed by other scholars, what has already been covered and what is missing (this takes 1.5–2 years);
- Producing a proposal (2.5–3 years from start); and
- Producing the doctorate.

We also have other methods that encourage students to keep tabs on their progress. Students complete an annual self-assessment form. This includes a projection of when they expect to graduate. This encourages them to participate in all aspects of doctoral production: research, progress in writing a paper for publication, and so on.

Who funds doctoral studies and how students are funded is a major issue as well. Funding models in my programme have also been reviewed. We have moved from partial funding for PhDs to full funding for full-time students. Money is available due to major fundraising that the university embarks on (since we are not government-funded), as well as money raised through grants to support doctoral education.

Doctoral education and economic development

Additional key issues have been pointed out, such as the premise that there is a link between doctoral education and economic development, even though it's not as evidence-based as it could be. I'm not advocating against doctoral education but we need to show that the link really is there. The research that proposes the link between doctoral education and economic development excludes research on the contribution of doctoral education to social development. The heavy emphasis on economic development needs

to be reviewed; and the research on the link to social development needs to be included as well. Research done by the National Science Foundation in the United States actually maps out the different types of doctoral degrees by disciplines and does a comparison in numbers, rather than discussing doctorates in a generic manner and applying the results in a generic mode as well.

This book signals a step in the right direction as there is great work in the making that needs to be taken further.

Patricio Langa

*Professor of Higher Education, University of Western Cape and
Eduardo Mondlane University*

The topic of training PhDs is an important but challenging one. I cannot speak the words I really feel like saying without undermining the position from which I am speaking. I just got a job offer as a professor at the University of the Western Cape (UWC) and I had to have a PhD to secure it. So I cannot say that we don't need more PhDs.

I will play the devil's advocate by questioning some of the views we usually take for granted. I was relieved to hear Cheryl de la Rey this morning raising both sides of the equation, showing that popular understandings on the need for training PhDs for a better society and for a knowledge economy are not taken for granted and that there are different views.

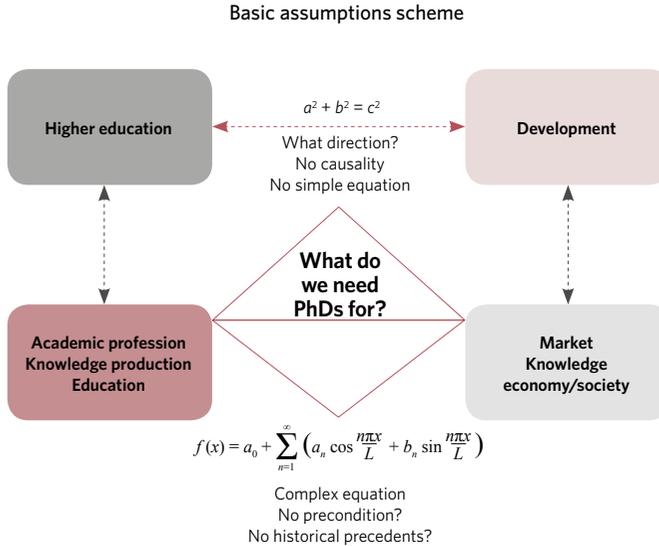
What is the purpose of the PhD in Africa?

I found the first chapter of this book interesting and informative, including its critical review of trends on the training for the PhD internationally. It raised the issue of countries like China, Brazil, Singapore and India that have in the last couple of years increased their PhD output. But the questions for me are: What are these PhDs for? Before looking at increasing the numbers, what is the purpose of the PhD and training for it in Africa? And do we need more PhDs?

There are two assumptions that come into this debate. One is that the basic economic resource in the knowledge economy – the means of production – is no longer capital, labour or natural resources: it is knowledge. But does this apply to most African countries? And if we describe and prescribe the pattern of the future of human society in such terms, are we not running the risk of being teleological by eliminating all other possibilities and alternatives? For many years, Africa has been subject to perverse external intervention, with dire consequences legitimised by teleological thinking that there is only one 'correct' path to development or because they did the 'right thing'. Is moving towards becoming a knowledge

economy the new ‘right thing’? We must pay attention to this kind of discourse and ask whether training PhDs is the only way to a knowledge economy.

I’ve captured most of that debate in this figure:



The rationale is that we need PhDs for two reasons: to feed both the academic profession and knowledge production. If we are in an ideal society, this will happen. Historically, the driving force has been the academic ethos: academics would publish and train their successors. One could say that *scientific libido* – a la Bourdieu (1997) – drove academic production. This centres around the idea that academic work of acquisition is work on oneself (self-improvement), involving an effort that presupposes a personal cost: an investment, above all of time, but also of that socially constituted form of libido, *libido sciendi*, with all the privation, renunciation and sacrifice that it may entail.

The *homo economicus* hegemonic discourse brings its own logic: training PhDs is regarded as a precondition to getting to a specific place known as development. This kind of thinking is based on an assumption: you need to move Africa from where it is to a different, ideal place.

I have just given a lecture recently about another possibility: how training PhDs can lead to poverty. For example, in my country (Mozambique), we are witnessing the virtualisation of cultural capital. This describes an increase in PhDs whose skills don’t match either academic needs or the market. So there is a mismatch between skills that PhDs acquire and the fit required by the market. This provides not so much a linear equation but a more complex picture.

The knowledge economy and doctorate production

I would like to make three points on the knowledge economy. First, China is not just producing over 50 000 doctorates because it wants to become a knowledge economy: it is becoming a knowledge economy, and so now it needs to produce more graduates. We need to look at the direction of the relationship: it could be the other way around as well. Most African countries are far from being knowledge economies, they are factor-driven economies. So why do they need PhDs? Look at Mozambique. We think we are blessed by all the natural resources but when government announces a new offshore mine and says that there will be many jobs created, the kinds of jobs that are created are not the jobs that fulfil the needs of a knowledge economy.

Another point is about the aging professoriate and the need to produce PhDs to replace them. This is a particularly South African issue that exists for historical reasons. In most countries, you don't have an aging professoriate: you have new people moving into these positions for the first time. You also have to look at the mismatch between positions created (by massification or expansion of higher education) and the number of PhDs who have been trained. The system also produces lots of postdocs but where are they headed? What is the role for these postdocs? Because of this, some people joke that the job of the postdoc is to look for another job.

Even if you consider that, in many African countries, there are still many positions to be created and that those few who are in academia tend to be co-opted to top government positions or to take up managerial positions, thereby becoming unproductive academic capital. But this does not mean we need to train tens of thousands to replace them. This again speaks to the issue of virtualisation of cultural capital. The fact that you have PhDs with virtual scientific capital does not mean that their power is not real. You have people with degrees that do not match with the academic positions they hold in the institutions, but they are holding real power. These are the people who at times hold the change.

I would like to discuss an example from Brazil. I visited the universities of São Paulo and Campinas. About 98% of their academic staff have PhDs. But this was not done under this reasoning of the knowledge economy. When the decision was taken to raise the entry level for academic profession in the 1980s, the idea was not the knowledge economy. It was to have a better-quality society and better-quality education. That is what is happening with São Paulo and Campinas where you see very tough competition between PhDs and postdocs, not just for positions created in these universities but also to move to lower-ranking

universities in the countryside. That is driven by a coordination body, the Coordination for the Improvement of HE (CAPES). It has a set of steering mechanisms to ensure the trickle-down of quality, often through collaboration with lower-ranking institutions. A key factor here is performance-based funding from CAPES to do these things. It's critical for higher-ranking institutions to apply for such funding to support lower-ranking institutions. Of course the final aim is to export quality.

My final point is that, in thinking about why we need PhDs in Africa, we need to go beyond meeting the needs of the market economy as the goal, and also think about a better society as the goal of higher education.

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The European PhD education in transition

As part of the ambition to create a European area for higher education and to foster the transition of Europe into becoming a knowledge society (Maassen and Stensaker 2011), there is an increasing attention on how and in what way European PhD education could play a role (EUA 2005, OECD 2010, LERU 2010, Byrne et al. 2013). In general it is possible to identify a changing political focus away from the traditional role of PhD education as a mechanism for replacing the older generation of professors in universities, to a role of the PhD as a mechanism for stimulating innovation, entrepreneurship and new knowledge networks in society at large (Neumann 2007). Typical questions asked are about how the modern PhD creates and transmits knowledge of relevance to the private sector, and how the PhD can stimulate more interdisciplinary and multidisciplinary problem-solving for the grand challenges facing society (Thune 2009, Thune et al. 2012).

However, the increasing interest in European PhD education can also be linked to other dynamics in European higher education. First, the PhD education was not really in focus with respect to the implementation of the Bologna process in many European countries, and was in many countries not on the agenda when the degree structures at bachelors and masters level, and the new quality assurance schemes, were developed (Kehm et al. 2009). Second, as part of the ongoing process of 'modernising' higher education in Europe there is a renewed interest in how universities and colleges can organise and manage their educational offerings (Huisman 2009), including the PhD education (Hyllseth et al. 2012). These drivers have created a momentum for change on the functions of PhD education, and how it should be organised and structured in the future.

Towards a stronger standardisation of the PhD in Europe?

While the Bologna process can be said to have changed European higher education along many dimensions, it should be underlined that PhD education is an area where considerable diversity remains, not only between countries, but also – in some countries – between higher education institutions (Kehm 2009). In general, it can also be argued that one common feature of PhD education is that it is an educational level that has struggled with time to degree, unclear admission and structures surrounding the training activities, and challenges concerning how the education should be funded (EUA 2005).

Kehm (2009: 225–229) have identified a range of different models in European higher education:

- The traditional research-based PhD is still a dominant model in a number of European countries. Typical features of this model are the content and quality of the PhD thesis, and a close relationship between the PhD student and his/her supervisor. In this model, there are not always mandatory courses and training activities.
- The taught PhD can be seen as a more modernised version of the traditional research-based PhD in that it emphasises considerable coursework and mandatory training for the candidate. Here, the thesis is of slightly less importance.
- The PhD by published work is another model in which training is often combined with publication of research articles throughout the whole PhD period. The PhD in this model is obtained when a number of research articles have been published.
- Professional PhD education is found in a number of countries throughout Europe and is again a model characterised by a high extent of coursework, often in combination with more practice-related work. This model also sometimes enables part-time study.
- The practice-based PhD is another variant of the professional PhD and is often found within art education and related fields of knowledge. In this model, a PhD may be obtained by demonstrating certain skills or competences.
- The integrated PhD is a particular model found in the UK. Admission takes place after a completed bachelors degree and there is a combination of extensive training and coursework.
- In addition, there are new models in which candidates obtain joint degrees or that stimulate collaboration between universities.

The diversity found in PhD education has led to concerns about the transparency and the possible transferring of skills at PhD levels within

Europe. Thus, some have argued for overarching standards and regulations that could ensure the quality and standards of PhD education across the continent. A major step in this respect was the establishment of the so-called Salzburg principles in 2005, and later initiatives taken by the European University Association (EUA) in relation to creating an overarching framework for quality assurance of the PhD across nation states (Byrne et al. 2013). The latter project also identified a growing interest in attempt to evaluate and assess PhD education by various stakeholders, and the introduction of more formal routines, regulations and standards at this level (Byrne et al. 2013: 42).

New expectations regarding the competence and skills of the PhD candidate

Historically, PhD education has had various functions in society. In many countries, it was a final accomplishment topping a long academic career (Neumann 2007). Today, there are a number of new expectations and demands directed at the PhD (Nerad 2004, LaPidus 1997, LERU 2010), not least in relation to policy agendas advocating innovation and entrepreneurship (Nerad and Heggelund 2011). Part of this changing agenda can be empirically documented in the form of an increased number of PhD candidates being admitted into this level. In some countries, the expansion of PhD education has been considerable. Countries with a high increase in the number of PhD students admitted include Ireland and the Netherlands, but also countries such as Portugal and Norway (OECD 2010). Other countries have traditionally had high admission rates and have managed to maintain that during the last decade (the UK, Sweden and Germany) (OECD 2010). This growth in the number of PhD candidates has also triggered some tensions and challenges in terms of supervision and employability. Since the growth in the number of PhD candidates is not matched by a growth in the number of supervisors, the latter have had to take on more students. While there are various practices between countries with regards to how such supervision is economically rewarded, both individually and towards the department/school to which the PhD candidate is affiliated, the main problem in many countries is to find supervision capacity. The dilemma for academic staff is that supervising a PhD implies benefits in terms of being kept up to date in your research field, and to maintain research activities in the form of joint publications and joint research projects, while formal requirements regarding how supervision should be undertaken and what it should involve are increasing.

When looking at where doctorate graduates get employed, there is much diversity in different countries, although there is a tendency that more PhD candidates find work outside higher education and research. For

example, in the Netherlands and Denmark, more than two thirds work outside the higher education sector (OECD 2010).

This change has triggered a debate about which competences PhD candidates need for future employment and leading European universities have argued that PhD education in Europe needs to be broadened (LERU 2010). The general criticism is that PhD candidates are often (LaPidus 1997; Nerad 2004: 85):

- Too narrowly trained and without generic skills;
- Short of professional competence, not used to working in teams, and with little experience of functioning in inter- or multidisciplinary settings; and
- Not experienced and trained in teaching and presentation techniques, with poor communication skills.

‘Graduate schools’ as a generic problem-solver?

One of the trends observed in Europe during the latter decade is that graduate schools are being developed as a response to the challenges noted above. However, graduate schools are found in very different forms and formats. They are far from being an institutional overarching umbrella intended as a governing layer of existing PhD offerings within a university with substantial organisational set-ups, its own board and considerable autonomy in terms of its offerings and activities. Some graduate schools are interdisciplinary while others are more discipline-based. Still, typically they all include a setting in which both PhD students and their supervisors can establish a joint learning environment, and where some sort of quality assurance activities are established. In some countries, one can also find national graduate schools often with the ambition of securing high academic standards in certain disciplines and professional fields (Thune et al. 2012).

Hence, although there is limited agreement on what a graduate school is, and how it should be organised, the arguments related to such establishments are often to create interdisciplinary settings, establish a critical mass of students, enable a better offering in courses and training activities, and secure an improved organisational structure for PhD education (Thune et al. 2012, Byrne et al. 2013). In a recent survey by the EUA, it was found that the number of graduate schools doubled in the period 2007 to 2010 (Byrne et al. 2013: 15). Even though some of this growth may be caused by the mere increase of PhD candidates in Europe (recent numbers suggest that there are currently around 600 000 PhD students in Europe), or more symbolic establishments and name changes, it points to

a willingness or at least an interest by universities to take a stronger responsibility for PhD education.

Whether the new graduate schools witnessed in Europe will be the answer to all the new challenges directed at PhD education is still an open question. However, there are indications that graduate schools may provide PhD candidates with a more structured research network and resources they otherwise may have forgone, although the effect on the quality of course offerings and training as such is more unclear (Thune and Olsen 2009, McAlpine and Amundsen 2011).

However, what can be seen is that PhD education in Europe is gradually being transformed from a more individual to an organisational responsibility where the universities take on a more significant role. The fact that EUA in 2008 established a separate Council for Doctoral Education in Europe (EUA-CDE) is only one sign of this development.

The increased demands and expectations directed towards PhD education may also create some interesting dilemmas for the future. While many countries still have problems concerning time to degree and dropout of their PhD candidates, one might wonder whether an increased course load or more intensified training will actually be a critical element in solving some of these problems. An increased offering of courses and training options may also create more confusion and insecurity among the candidates about what sort of activity is 'smart' to engage in given their time limitations.

New expectations may also create challenges for the universities because increased interdisciplinary or multidisciplinary training may cause tensions among departments. More traditional disciplinary-oriented departments may experience it as a challenge if additional interdisciplinarity implies a reduction of the coursework and training that is more disciplinary-specific. As such, one could argue that the establishment of graduate schools might imply a managerial governing over PhD education at the expense of the disciplines. Is the new graduate school the arena in which contestations between politics, administration and disciplinary knowledge may perhaps play out?