CHAPTER 11

Why Core Values are the Way Forward in Doctoral Education

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Abstract
Moving away from the concept of a globally converging doctoral education model, this chapter explains the context for and importance of proclaiming a global core value system as a way forward for doctoral education in both the Global North and Global South. The description of the process for developing this value-based concept, the enumeration of changes that occurred during the past two decades, and the convening of an international workshop and conference provide a foundation and model for future open communication and critical debate between generations within the doctoral education community. Moving beyond a discussion of disciplinary expertise within the academic system and across continents, the contribution of this chapter is to encourage early career researchers, their supervisors, university administrators, and funders of doctoral education to consider seven key recommendations for building, renewing, and reforming their local and national doctoral education systems.

Keywords: Doctoral education system, value-based postgraduate concepts, early career researchers, doctoral supervisors, ecology of knowledges, overcoming inequalities, social justice.

1 Introduction
While writing this chapter, I paid extra attention to finding the right voice. As a senior woman scholar from the Global North, I do not want to lecture or come

across as inappropriately authoritative, as has been the case with many voices from the Global North. Rather, I want to speak in a manner that respectfully conveys the many lessons that have been learned within the broad field of doctoral education – both the mistakes my colleagues and I have made, as well as the exhilarating moments of discovery, intended policy changes in graduate school operations, and positive outcomes obtained by mentoring doctoral students who are transitioning to the next professional stage after completion of their degree.

With 35 years of research experience in doctoral education around the world, including the Global South, I understand that the next generation of researchers and their supervisors need to forge their own way. However, I also believe they may be interested in the lessons my colleagues and I have learned and the value-driven framework we have proposed for an inclusive doctoral education process, successful training of researchers, and a research product that is of societal value. In the context of this chapter, when I speak of 'we', I am referring specifically to the five colleagues with whom I planned and coordinated an international workshop and conference on 'the forces and forms of doctoral education worldwide' in Hanover, Germany, in 2019[1]. We subsequently wrote and edited an open-source book on the subject (Nerad *et al.* 2022), in which we concluded that focusing on a set of global core values in doctoral education is a possible way forward. Although the Hannover recommendations did not specifically discuss transforming postgraduate research within Africa, they were developed with relevant input from and the perspective of experts and early career researchers from the Global South and may well offer a way for-ward for African educators.

After an overview of the background and context for this chapter, I will explain how we arrived at a set of global core values, rather than proposing a converging doctoral education model and best practices. Then I will present our major research findings and the seven Hannover recommendations for doctoral education worldwide that grew out of those findings as the result of an intergenerational, interdisciplinary, and integrative process. Finally, I will describe how a group of international early career researchers (ECRs; doctoral students, postdocs, and mid-career academic professionals), including three ECRs from Africa, who were involved in the creation of the core value recommendations, grappled with them, and how they see themselves moving forward using the core value set. I will conclude with warnings and hopes. On

[1] Hannover (2019), https://www.doctoral-education.info/documents.php

the one hand, I warn of the threat to a transparent and clear quality-assurance process if governmental incentives are misused to increase the number of PhDs awarded. On the other hand, I feel hopeful that a sustainable, socially just future in diverse contexts and systems of higher education, including African doctoral education, can be encouraged by the energetic, thoughtful next generation of researchers and their committed mentors.

2 Overview of Background and Context

Much has changed since the turn of the 21st century, when the Center for Innovation and Research in Graduate Education (CIRGE) at the University of Washington, Seattle, WA, USA, with a grant from the US National Science Foundation and the US Ford Foundation, organized an international workshop in 2005 that assessed the forces and forms of change in doctoral education worldwide for the first time. We foresaw the emergence of a unified set of standards for doctoral education worldwide; the book resulting from that first workshop was titled *Towards a Global PhD?* (2008)?[2]

Most governments view knowledge as a critical national resource for economic growth, innovation, prosperity, and international competitiveness (Carnoy *et al.* 2013; Dill & Van Vught 2010; Godin 2009; Kehm & Teichler 2016; Maheu *et al.* 2014; OECD 2013). As a result – albeit often in simplistic ways – governments use doctoral and postdoctoral education as a means to train innovators (Bunting *et al.* 2015; Chien & Chapman 2014). Some have provided substantial funding for efforts to build a national capacity for research and development, and quality assurance has become a major issue of concern in Europe (Byrne *et al.* 2013), in China (Yang 2012), and in Latin America (Acosta & Celis 2014). Governmental funding agencies often borrow policies from across national boundaries. Empirical research by Steiner-Khamsi (2016: 382) indicates that policy borrowing helps to mobilize financial resources, 'especially when it is preceded by political talk of falling behind some interna-

[2] Subsequently, CIRGE organized three additional international workshops: in 2008, in Melbourne, Australia (Nerad & Evans 2014); in 2009, in Kassel, Germany; and in 2010, in Penang, Malaysia (Nerad *et al.* 2011). At these events, a diverse group of senior experts in doctoral education (e.g., graduate deans, vice presidents for research, directors of research centers, and managers of graduate schools) explored the impact of globalization on doctoral education worldwide.

tional standards or best practices'[3].

Policy borrowing has crossed national boundaries in the creation and funding of doctoral grant programs in order to better prepare versatile, highly trained professionals to address large-scale societal problems that cannot be solved through a single disciplinary focus or by a single researcher (Nerad 2020a). These multi-disciplinary, national flagship programs emphasize skill building, the learning environment, and international collaboration, in the form of visits by students to other universities. Moreover, geographical and intersectoral mobility has been achieved by internships in non-academic settings during doctoral and postdoctoral training. Over the years, the research community has noticed that although these governmental flagship programs were intended 'to play a catalytic role at universities and at the doctoral education level by enticing other departments and their faculty to emulate their novel structures', they have not generally functioned in that way. In fact, 'governments often forget that other programs have neither the finances nor the necessary staff to offer such elaborate programs' (p. 57). In our 2019 assessment of the changes made over the previous 20 years in doctoral education worldwide, we observed that these converging flagship programs covered 2% - or in some countries (e.g., Germany), up to 19% - of the PhDs trained in a country. This led us to conclude that the vast proportion of the structures and forms of doctoral education were not moving in the same direction (Cloete *et al.* 2015; Nerad & Evans 2014). These facts, the 2019 workshop, the subsequent public conference, and our post-event reflections made clear that the variety of different shapes and forms that doctoral systems take around the world will remain intact, and that the recent reforms will only produce a greater variety. This contrasts with what we previously maintained (Nerad & Heggelund 2008) – that the convergence to a global PhD would benefit the global doctoral education community.

A number of factors have moved us further away from a single global system of doctoral education. These include several major catastrophes that have accelerated world crises to such an extent that we have not been able to fully come to terms with them. First, there is the immediate health crisis of the COVID-19 pandemic. Then there are various human-generated crises,

[3] The key element of policy borrowing is the conscious adoption of a policy from one context to another, led by the belief that foreign educational policies and models might solve existing or emerging problems (Steiner-Khamsi 2016: 382).

including the long-looming environmental crisis and the continued wars and internal conflicts in Afghanistan, Myanmar, Somalia, Syria, and Sudan, as well as Russia's more recent invasion of Ukraine. The accelerating climate crisis continues to produce an increasing number of natural disasters, including severe monsoons and hurricanes, resulting in disastrous flooding, lack of drinking water, power outages, lost harvests, and more.

These crises have forced and will force us to reflect on our fundamental values. As scholars who create new knowledge in a complicated and complex world, we are confident that applying a global core value system in doctoral education is the way forward for our societies. Not by retreating into an academic ivory tower but rather by accepting leadership roles based on these global core values, the worldwide doctoral education community can set standards that will contribute to solving health, political, and environmental crises. This is the message I would like to convey to the African postgraduate community so that inequalities in the access to doctoral education and the provision of knowledge can be overcome.

3 How we Arrived at a Set of Core Values in Doctoral Education

In 2018, five colleagues (David Bogle, Ulrike Kohl, Conor O'Carroll, Christian Peters and Beate Scholz) and I, all experts in doctoral education in various European countries and the USA, applied for a grant from the Volkswagen Foundation to assess changes and reforms in doctoral education worldwide since 2000. For the purposes of this chapter, I provide a brief overview of the areas of specialisation of the colleagues.

David Bogle (I.D.L. Bogle) is pro-vice-provost of the doctoral school (graduate dean) at UCL. He is also professor of chemical engineering, with research interests in process systems engineering and systems biology. He chairs the Doctoral Studies Policy Group of the League of European Research Universities (LERU) and sits on several advisory boards for doctoral education across Europe.

Ulrike Kohl is director of Erwuesse Bildung Luxembourg, a non-profit association in the domain of personal and professional development and training. She worked as head of human resources in one of Luxembourg's research institutes and at the Luxembourg National Research Fund, where she

coordinated the activities on doctoral training and research careers for 17 years. She contributed to the set-up of the Luxembourg National Quality Framework for Doctoral Training in 2015. She is a part-time coach and research career consultant.

Conor O'Carroll is an independent consultant on higher education and research policy at SciPol. He is active in the development of European policy on research careers, with a focus on doctoral education and training, and led the development of the European innovative doctoral training principles.

Christian Peters is a political scientist and Managing Director of the Bremen International Graduate School of Social Science (University of Bremen/ Jacobs University Bremen). Besides managing a research unit with more than 70 early-career researchers, he has interests in populism studies, the political impact of new media technology and the relationship of religion and politics.

Beate Scholz is founder and director of Scholz CTC GmbH. As strategy consultant, trainer, coach, reviewer, and researcher, she focuses on researchers' career development, with special attention to doctoral education and equal opportunity. She works internationally with individual researchers and research policymakers as well as with universities, research funders, and research institutions. Scholz was in charge of moderating the Herrenhausen Conference.

The Volkswagen Foundation, a private German foundation, has allocated substantial resources to doctoral education since the end of the 20th century. The awarded grant funded a 3-day international workshop and a 1.5-day conference on doctoral education in September 2019. The organizing team selected five topics after conducting a survey that asked 40 senior experts in doctoral education to identify key issues in their countries' doctoral education. The topics were as follows:

1. The forces, structure, and quality assurance of doctoral education since 2000 (an overview at a systemic level);
2. Supervision and funding (an institutional view);
3. Capacity building in doctoral education in the era of globalization;
4. Global labor market developments through doctoral education (through an economic lens); and

5. The ethical and political role of the researcher, and in particular, the doctoral graduate (systems view).

Recognizing the diversity of academic cultures and institutional systems worldwide, we invited experts and ECRs from both the Global South and Global North to collaborate on five interdisciplinary and intergenerational teams. We asked them to assess doctoral education during the last two decades, using their respective country lenses as well as their different disciplinary approaches. These groups presented their findings during the 3-day workshop[4]. In each group, the ECRs were given space and a voice to build camaraderie, to collaborate internationally, and to develop confidence in the process. In fact, during the afternoon of each workshop day, after a lively discussion of the prepared papers, the ECRs engaged with the senior experts in a collective thinking exercise, in the form of a world café. They generated policy recommendations that were then presented and discussed during the public conference. In addition, we asked the ECRs to design a creative presentation for each workshop day on their views, comments, and concerns relating to what they had heard and experienced on the previous day. These presentations were made during the first event of each workshop day, and the other workshop participants reported a deep appreciation for the ECRs' daily contributions.

For the public conference, we opted for a model that did away with the hierarchical system of social and structural inequalities typical of academic conferences, whereby a small group of experienced and self-confident, often senior participants tend to dominate the speakers' floor. Instead, we introduced special software that could easily be accessed online by the conference participants on their private digital devices. The software allowed the event team to solicit questions and input from the audience in real time during the presentations of the five working groups. In addition, the major points presented by the working groups were displayed on a large screen at the back of the conference hall stage. This process resulted in a real-time ranking of questions, based on the content raised by the questioner and not on their status or verbal competence. Using this interactive process, the core values were formulated at the end of the 1.5-day conference, creating what became known as the Hannover Recommendations 2019.

[4] The workshop followed the format of the international workshop series developed by CIRGE at the University of Washington from 2005 until 2011.

4 Summary of the Findings Presented in Hannover

Our research, which was presented at the workshops, found an increase in doctoral participation in a number of countries – particularly in China, but also in Brazil, Malaysia, Mexico, India, and South Africa – had occurred between 2000 and 2018. Our analyses showed that most of the reforms and changes of the two past decades reflected a response to problems as well as a drive for innovation and the wish for a highly educated and well-trained researcher labor force. In some countries, the growth in universal access to education had produced an educational path effect that increased doctoral education; for example, this was the case in South Africa. However, the wish of some governments and university leaders to achieve a high position in the international rankings of world-class universities steered doctoral education programs to increase such outputs as more PhDs awarded and more articles published, without considering the context in which a quality doctoral education and quality research results are possible. Some governments forgot and still forget that, for such a direct link between innovation, economic growth, and the training of more PhD students to occur, many additional factors (e.g., a high-quality research infrastructure, including well-qualified university teachers, a mentoring environment at universities, collaboration with wider sectors of society, and wider sectors of the labor market that hires PhD graduates) need to be in place.

The changes we observed have had a significant positive impact. The emphasis in growth of numbers increased the variety of students joining doctoral programs; these included more women, more older students, more people from traditionally underrepresented racial and ethnic groups (e.g., Indigenous and migrant peoples), and more international students. At the same time, the changes have had some unexpected negative side effects. The following sections detail the findings of our research, including these negative effects.

4.1 The Traditional Purpose of the PhD has been Questioned

In the 21st century, doctoral education in the Global North has focused on preparing PhDs for a wider range of employment possibilities in business, government, non-profits, and academia. In contrast, the focus during much of the previous century was on preparing male scholars to teach and research with authority, and to do so independently within their disciplines. Whereas the past role of doctoral students was as 'stewards of the discipline', that role has shifted

to become one of thought leaders in knowledge-intensive sectors beyond academia (Golde & Walker 2006). While the Global North failed to create more academic positions to match the increase in doctorates awarded, most countries of the Global South still seek a sufficient number of qualified doctoral supervisors.

The expansion of the role and function of doctoral education has led to the development of doctoral training programs that include preparation for multi-, inter-, and transdisciplinary research; cross-sectoral and international collaboration; professional and especially entrepreneurship skills; and internships in non-academic organizations. In addition to what we reported in 2019, a variety of doctoral education programs were subsequently developed during the COVID-19 pandemic, including more online and hybrid doctoral programs.

4.2 A New Diversity of Forms has Emerged in Doctoral Education

With the steady broadening of doctoral education to include new fields of knowledge, new varieties of doctoral degrees and doctoral outcomes have emerged over the past few decades. More applied doctorates in the arts have brought creative work into this field of practice. In the health sciences, professsional associations (especially in the United States) lobbied successfully for applied doctorates in audiology, acupuncture, physical and occupational therapy). Similarly, engineering and other professional fields, such as social work and clinical psychology, created applied doctoral degrees that require a thesis, but not necessarily a research-based one. In the field of education, applied doctoral programs granting an EdD have existed since the mid 20th century (Zusman 2017).

In the 19th and much of the 20th century, the outcome of doctoral study was a sole-authored monograph that made an original contribution to one's discipline. Today, in some disciplines (e.g. economics, earth sciences), and increasingly in others, a collection (often three) of actual and possible journal peer-reviewed articles as well as co-authored papers are accepted (Kehm & Teichler 2016). However, the doctoral candidate needs to be the first author on these papers, or a substantial contribution must be made clear, and they need to produce single-authored journal articles as well. Other non-traditional formats exist, such as comic books, creative art forms, and use of an Indigenous language (e.g., in New Zealand). At the same time, we see the opposite trend,

with English-language dissertations now allowed in non-English speaking countries.

In addition to applied doctorates, we have seen recent changes in joint degrees and dual degrees. Joint degrees (also called / binational doctoral degrees) are awarded by doctoral programs and universities that cooperate in national and international networks. Dual degrees (also called Cotutelle de Thèse) require joint supervision and adherence to the dissertation requirements of both universities (Bamford 2020).

4.3 Doctoral Programs Increasingly Focus on Dual Outcomes

We observed a shift during recent decades away from a singular focus on the dissertation and its peer-reviewed research publication to a focus that includes the dissertation and the research product as well as the trained person. This development emphasizes skills training and employability, while also retaining the traditional emphasis on Bildung (i.e., a process of personal and cultural maturation). Most government-funded flagship doctoral programs (e.g., innovative training networks of the European Community, the US National Science Foundation National Training Program, and the German Excellence Initiative) pursue such a goal. My colleagues and I are strong supporters of this dual-outcome approach to doctoral education. We view doctoral education as both a process of training the researcher and of producing a socially valuable research outcome.

4.4 Institutional Structures have been Reformed

In conjunction with changes in the numbers, purposes, and forms of doctoral education, the institutional structures of doctoral education and doctoral supervision have experienced changes and reforms (Hasgall *et al.* 2019). The responsibility for doctoral education has extended beyond one single doctoral supervisor to a team or a committee of professors. Furthermore, training for new supervisors is offered and even mandated in some countries. Supervisors' performance has increasingly become part of the doctoral quality-assurance process in countries such as Australia, New Zealand, and the United Kingdom.

Another institutional structural change has been the creation of doctoral schools. Governmental funding agencies and university leaders have come to understand that a centralized structure for doctoral education allows for

greater cross-campus innovation and institutional oversight. Such centralized structures can conduct research as a base for campus-wide improvement on doctoral education and can monitor quality and suggest base-line admission and completion requirements.

4.5 Workforce Preparation has been Steered by Government Funding

The governmental focus on the knowledge economy (Nerad 2020a), especially in Canada, New Zealand, and the United States, has steered funding toward science, technology, engineering, and mathematics (STEM) fields. At the same time, it has resulted in a reduction of funding for the social sciences and humanities. With a shift toward greater workforce preparedness has come the offerings of diverse forms of professional development training, career advising workshops, and even career coaching for doctoral students by central university units, such as graduate schools.

4.6 Time-to-Degree has been Established as an Efficiency Measure

Fixed time frames within which doctoral students have to complete their degree requirement are a common trend. This has largely been the result of governmental funding agencies wanting to see full-time, fully funded students complete their studies within a certain time. This trend is an efficiency measure, not a quality measure, and can result in the abuse of well-intended governmental monetary incentive systems by university administrators seeking to reap additional funding. In Europe, the expected completion time is 3 to 4 years for full-time students; in Northern America, Japan, and India, the target time is 5 years. We posit that adhering to a high-quality doctorate is more important than enforcing rigid time-to-degree rules.

4.7 Quality Assurance can Take Different Forms

Quality assurance in doctoral education ranges from professors and committees assessing the work of doctoral candidates within and among universities to external units and organizations that assess the quality of the entire doctoral training process. Two main approaches to the quality assurance process exist:

the first emphasizes the value of regulatory assurance that focuses on compliance and sanctions; the second emphasizes the value of formative feedback to bring about students' improvement. National governments and supranational organization – among others the European Union, or UNESCO – are seeing academic research as a source of activities and discoveries that are indispensable to the achievement of vital national and supranational goals. Therefore, by 2020 many countries, national or supra-national organizations have developed documents with guidelines and standards for assuring the quality of their higher education systems, including doctoral education.

4.8 The Focus of Research on Doctoral Education has Evolved Over Time

Lastly, we observed that doctoral education as a field of academic scholarship and research has expanded since the 1990s, and that the scholars investigating doctoral education have come increasingly from different disciplinary backgrounds. In the United States, for example, economists pursued research in the 1950s and 1960s for the purpose of labor market projections (Nerad 2020b). In the 1970s and 1980s, sociologists and economists scrutinized doctoral education so they could better understand the growth of US higher education and its international standing. In the 1990s, the accountability movement was concerned with the long time it took students to earn a degree and with high rates of attrition. Public policy researchers and private foundations that funded humanities and social science doctoral students undertook such studies because they wanted to understand the most effective way to allocate funding to doctoral education in order to reduce the length of time to degree and high attrition rates.

Today, a wide array of researchers (e.g., physicists, chemists, geography, and higher education scholars) study doctoral education through their respective professional organizations. Subsequently, specialized journals (e.g., Studies in Postgraduate and Doctoral Education and the online journal International Journal of Doctoral Education) as well as an international listserve on doctoral education research (IDERN), have been established. Just since the 2019 conference, several books on doctoral education have highlighted the various trends, challenges, and institutional changes in doctoral education worldwide (e.g., Cardoso *et al.* 2020; Shin *et al.* 2018; Yudkevich *et al.* 2020). A few other books point not only to the challenges faced but also to the opportunities for doctoral education (e.g., Barnacle & Cuthbert 2021; Lee

& Bongaardt 2021). Yet, none have proposed a global core value system as the common denominator between countries amid their multiple differences.

5 The Core Values of the 2019 Hannover Policy Recommendations

My brief description of the most prominent changes made during the last few decades provides a picture of the enormous variety of forms, forces, and structures in doctoral education around the globe. The Hannover conference revealed a common vision of what is most critical in the education of doctoral students across the globe, even as the processes and methods to achieve that vision may vary.

The following seven key policy recommendations are based on a set of global core values that were the result of the collective work across multiple borders described in this chapter. Each has a number of sub-recommendations that are not detailed here but that are available online[5].

1. Establish a global joint value system for doctoral education based on an ecology of knowledges that recognizes and seeks to overcome existing inequalities in the access to doctoral education and the provision of knowledge.
2. Foster diverse ways of operating; embrace the diversity of cultures, people, and universities.
3. Encourage diverse forms of mobility to develop multiple careers and ensure a more balanced distribution of talent around the globe.
4. Ensure that the key contributions of the arts, humanities, and social science research and doctoral education get strong support.
5. Support more research on doctoral education for evidence-based decision-making on doctoral education around the globe.
6. Advance the institutional environment for doctoral education continuously.
7. The pivotal goal of doctoral education must be and remain the development of original, responsible, and ethical thinkers, and the generation of new and original ideas and knowledge.

[5] See either the open-access publication by Nerad *et al.* (2022: 51 – 55) or the Volkswagen Foundation website.
https://www.doctoral-education.info/hannover-recommendations.php

The argument in these recommendations is that research training should be based on a joint value system rooted in the universal principles of the United Nations Human Rights Charter. This charter demands respect for the individual and aims for an equilibrium of knowledge from the South, North, East, and West that includes Indigenous knowledge systems in an ecology of knowledges.

6 ECR's Assessment of the Set of Core Values

The ECRs who participated in the workshop and conference came from a diversity of cultural, racial, ethnic, professional, and educational backgrounds, with representation from all continents. Their countries of origin were Australia, Canada, Chile, China, Finland, Germany, India, Japan, Kazakhstan, Romania, South Africa, the United Kingdom, the United States, and Zambia. Diversity also existed across their initial starting points, assumptions, and experiences in doctoral education. Some were early in their doctoral studies, while others had just completed their studies. Some were based in their home countries, while others studied and worked abroad; collectively, they represented both established and younger higher education systems. The majority of the group were not native speakers of English. Some focused their field of inquiry directly on higher and doctoral education, while others studied unrelated disciplines; however, all were devoted to improving the state of doctoral education and to ensuring the success of future doctoral researchers.

The ERCs wrote a chapter titled 'Reflections from Early-Career Researchers on the Past, Present and Future of Doctoral Education' (Mason *et al.* 2022) in the book that grew out of the conference. In it, they narrated five major lessons learned during the workshop and conference and explained their acceptance of the Hannover policy recommendations, thereby allowing us as senior people to hope for a sustainable future that is based on and incorporates the principles of social justice (see also Nerad & Peters 2022).

First, the ERCs were impressed by the sheer depth and diversity of the practices, norms, policies, and debates surrounding doctoral education and the challenges to be faced in coming to terms with this reality. For example, they commented on the variation even in the terminology used to refer to doctoral students: PhD student, graduate student, doctoral researcher, doctoral scholar, doctoral candidate, junior researcher, and early career researcher.

Second, they noted that many of the challenges confronting doctoral

education are shared across a diversity of contexts, albeit in different ways and to different extents. They also noted that some countries require special training for doctoral supervisors, while others do not, and that the forms of funding for doctoral education were more varied than they had expected.

Third, they reported the discussions among them were characterized by both an unease about the broad nature of the recommendations and a desire for the development of concrete and actionable policies. In the end, the ECRs acknowledged that the recommendations provided a useful and effective set of guiding principles that can be applied to diverse contexts. They agreed that, ultimately, the goal of education, including doctoral education 'is for the individual, the local community and for society in general' (Mason *et al.* 2022: 248).

Fourth, they reflected on the dedicated space they were given during the preparation for the workshop, the workshop, the conference, the writing of their chapter, and their experiences engaging in the doctoral education community. Notably, they emphasized engaging *in* the doctoral education community, as opposed to engaging *with* the community:

> It was not merely being in the presence of well-known and established scholars that we valued, but the fact that we were welcomed into the community and were part of the conversations with experts in the field of doctoral education. (Mason *et al.* 2022: 249)

Fifth, the ECRs understood that, in looking toward the future, they will need to play a role in translating the recommendations into practical application and real change in their local contexts. They stated, 'The importance of collaborating beyond your institution and country was clearly evident, and we realized that each of us was not alone' (Mason *et al.* 2022: 250). Moreover, they recognized that, after needing to move more of their lives online as a result of the lockdowns during the pandemic, they could now continue to be 'very well connected and collaborate across the globe without blowing the budget' (p. 250). They learned that they could practice doctoral education in a manner which 'is context-based and historical, but we need to cross borders, and so does our understanding of it' (p. 251).

These reflections filled my colleagues and myself, as seniors, with hope for a future in which social justice and research for the benefit of society will prevail.

7 Toward a Hopeful, Sustainable, and Just Future

In the concluding chapter of the book (Bogle *et al.* 2022), that grew out of the conference we explained our hopes for a sustainable and socially just future and why we thought doctoral education needs to be based on a set of core values if it is to succeed in training our doctoral students and young researchers to be future leaders who can tackle societal problems in their communities, neighborhoods, and countries. Doctoral students, including in Africa, must be trained to undertake research that is rooted in the universal principles of the United Nations Human Rights Charter. On the one hand, we are aware that the current divisions in society and the uncertain future have caused many people to lose faith in political and scientific expertise and made them turn to nationalist or other extremist belief systems based on prejudice and not on evidence. On the other hand, we recognize that the health crisis and the sustainability crisis have made society more aware of the role of research and researchers in tackling these existential challenges. South Africa, for example, produced a version of the Moderna vaccine in February 2022, which brought protection to the African people, without requiring that the vaccine be imported. Well-trained researchers who can work together across disciplines are more important than ever in all parts of the world, and Africa is no exception.

Our keynote speaker from South African, Professor Jonathan Jansen,[6] who was also co-author of the prologue with Cyrill Walters, urged us to ensure the training of a 'thinking doctorate' – a training that enables doctoral candidates to articulate the significance of their work and to give a convincing account of its conceptual framework. We believe that doctoral graduates should be able to see their work in the societal context and to make a clear case for the relevance of their work to the public, going beyond the traditional peer group. In short, they must be prepared to work closely with society. This also means doctoral candidates should be required to reflect on the ethical dimension of their work, the impact it may have, and how their work fits into the ecology of knowledges. In this way, doctoral graduates can engage

[6] Jonathan Jansen is a distinguished professor of education at the University of Stellenbosch and president of the Academy of Science of South Africa. He was a fellow at the Center for Advanced Study in the Behavioral Sciences at Stanford University, before serving as vice chancellor and rector of the University of the Free State for 7 years.

uprightly with society, make a case for knowledge that is evidence-based, and articulate how to handle the uncertainty inherent in research results.

I want to remind current and future doctoral candidates and researchers that undertaking research and producing new knowledge has always – ideally, if not in practice – been a global collaborative activity. Thus, we are excited about the open science movement because it provides us with access to data and results, without the old barriers, and can enhance global efforts to address major problems, such as pandemics and climate change. With these new tools for accessing information, we can bring the intellectual community into closer contact with the users of their research, so we can jointly develop ways forward to tackle the existential challenges that confront society.

We understand and accept that change is occurring at every level in societies globally, and that this necessitates new research and new systems, rather than simply relying upon and adopting best practices from elsewhere. Emerging and established doctoral systems in Africa, as elsewhere, have a chance to undertake research locally at their own universities and to collect evidence for making policy decisions pertaining to doctoral education. For example, the following questions could be asked: What is the average time-to-degree? How low or high are attrition rates across programs? What do student surveys say about doctoral graduates' satisfaction with their training and education? What do universities know about the career paths of their doctoral recipients?

In advancing the institutional environment for doctoral education, my colleagues and I have learned that the introduction of a supervisor prize, selected based on a survey of doctoral students, is much welcomed by professors and students alike – not only in the Global North but also in the Global South. More broadly speaking, an environment of openness and constructive debate is fundamental to research and is the bedrock of democracy. These values must be sustained and built into doctoral education worldwide.

My colleagues and I are aware, however, that the opposite of these developments is evident through an increase in research misconduct, a lack of reciprocity in some countries that are less open, and threats to research themes that do not fit with official government policy. We recognize that 21st-century doctoral candidates and doctoral recipients must deal with these new issues. In particular, our younger colleagues need to know that, when monetary incentives are provided by the government to universities for each completed PhD, with the overall goal of increasing PhD production, the quality of the thesis can

suffer due to a rushed external review process, as has been the case in some South African universities. In addition, an inefficient school system and a shortfall of revenue to universities has resulted in poorer quality doctoral work (Jansen & Walters 2022). In China, governmental pressure to increase doctoral enrollment has led to a decreased quality in doctoral training, possibly in part related to difficulty managing the expansion needed to accommodate more students (Yang 2012). Furthermore, the requirement by Chinese universities that candidates must have several publications before they can receive a doctoral degree has done little to improve the quality of dissertations and resulted in an increase in the number of dubious new journals. Quality in doctoral education and a transparent quality assurance system are key issues doctoral programs must address, as they seek solutions that will improve the system and deter corruption (Jansen 2023).

For these reasons, we stress the need for good education and training, and especially for mentorship to support students. African university administrators must recognize, make visible, and reward committed mentorship by supervisors who go beyond mere advising and consider the full person and their development, in the classical sense of Bildung (Jansen & Walters 2022).

ECRs around the world currently face a number of pressing challenges for which we must collectively come up with creative solutions. High on this list is the challenge of employment for PhD recipients. The majority of PhD students are still trained using the19th-century model of an academic apprentice. In many countries, the number of available jobs for PhD graduates does not match the number of graduates seeking employment. In other places, such as India and Africa, there is a need for quality academic researchers, but the university lacks funding sources, an adequate research infrastructure, and professional development opportunities. The precarity of employment for PhD graduates (as researchers) is a global issue, and our academic research systems must confront this issue and must broaden employment opportunities through training and career development support.

Another value I would like to emphasize for ECRs everywhere, including in Africa, is the importance of mobility for personal development as well as for future employability. Four types of mobility can be built into doctoral education without much additional cost. Intersectoral mobility gives students experience with a more diverse working environment. Interdisciplinary mobility takes students out of their disciplinary and thematic silos and brings different disciplinary approaches to research challenges. International mobility

can broaden research across national borders, and perhaps more importantly, across cultural horizons. Lastly, virtual mobility via new technological tool enables those in disadvantaged regions to collaborate internationally.

As I continue to meet with the group of ECRs from the Hannover conference, I am impressed by the persistence and commitment of this peer-mentoring group. In monthly Zoom meetings, we discuss what is not usually said openly between doctoral students and supervisors, among doctoral students, and among new doctoral supervisors. This ongoing work gives me hope that more leaders will emerge from doctoral programs worldwide who are critical, creative, autonomous, and responsible risk-takers as they work in open communication across international contexts.

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