NATIONAL REVIEW OF SOUTH AFRICAN DOCTORAL QUALIFICATIONS

2020-2021

DOCTORAL DEGREES NATIONAL REPORT

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1 *Professor Rocky Ralebipi-Simela sadly passed away on 16 January 2022. Right up until the meeting of 14 January, she was an active and valued member of the Doctoral Degrees National Report Writing Team. She contributed immensely to the work of the CHE, serving in various capacities for nearly two decades. The passing of Prof Ralebipi-Simela is not only a huge loss to the Ralebipi-Simela family, but also to the CHE and to the higher education sector in South Africa.*

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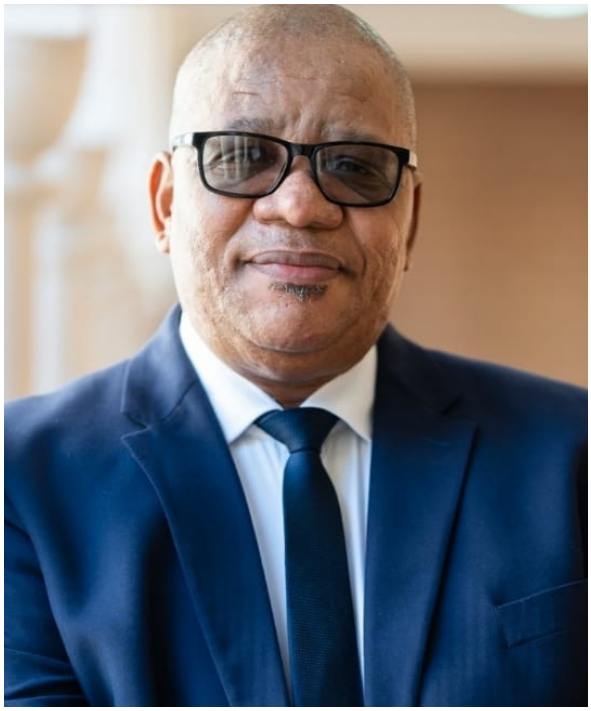
List of Acronyms

ASSAf	Academy of Science of South Africa
CESM	Classification of Education Subject Matter [code]
COVID-19	Coronavirus pandemic
CHE	Council on Higher Education
CoP(s)	Community (ies) of Practice
CREST	Centre for Research on Evaluation, Science and Technology
DDB	Doctoral Degrees Board
DHET	Department of Higher Education and Training
DSI	Department of Science and Innovation
DTech	Doctor of Technology
DVC	Deputy Vice-Chancellor
FT/PT	Full-Time/Part-Time
HCD	Human Capital Development
HDC	Higher Degrees Committee
HEIs	Higher Education Institutions
HEQC	Higher Education Quality Committee
HoD(s)	Head(s) of Department
HEQSF	Higher Education Qualifications Sub-Framework
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
nGAP	New Generation of Academics Programme
NHREC	National Human Research Ethics Committee
NRF	National Research Foundation
NQF	National Qualifications Framework
PhD	Doctor of Philosophy
PQM	Programme and Qualification Mix
RPL	Recognition of Prior Learning
SAQA	South African Qualifications Authority
SARChI	South African Research Chairs Initiative
SENEX	Senate Executive (Committee)
SER(s)	Self-Evaluation Report(s)
SET	Science, Engineering and Technology
UCDP	University Capacity Development Programme
UoT(s)	University (ies) of Technology



FOREWORD

Prof N. Themba Mosia
Council Chairperson

The Council on Higher Education (CHE) is the Quality Council for higher education, as mandated by the National Qualifications Act of 2008, as amended. In this role it is responsible for the quality assurance of the qualifications on the Higher Education Qualifications Sub-Framework (HEQSF), a responsibility which it discharges through its permanent sub-committee, the Higher Education Quality Committee (HEQC). In addition, the CHE derives its mandate from section 5 of the Higher Education Act (Act 101 of 1997) as Amended to promote, accredit, and audit quality assurance mechanisms across the higher education system, and advise the Minister of Higher Education, Science and Innovation on all higher education matters.

South Africa has 26 public universities, of which there are 23 that currently offer doctoral qualifications. There are also five private higher education institutions in South Africa which offer doctoral qualifications.

The proposal for a national review of doctoral qualifications arose from discussion between the CHE and the National Research Foundation (NRF). In fulfilling its mandate of Human Capital Development (HCD), the NRF has several funding instruments that support doctoral studies. However, in providing this support including through financial investment, the NRF needs to be assured that the doctoral qualifications offered by higher education institutions meet national quality standards for doctoral degrees.

The quality of the doctoral qualification is of critical importance, not only to the NRF and the CHE, but also to the public, potential employers of doctoral graduates, the institutions awarding doctorates, and their students. Furthermore, doctoral qualifications form part of the funding framework for public higher education institutions. Quality impacts in a number of ways: on knowledge creation, international comparability, competitiveness, and mobility; on the preparation of future researchers and their research output; and on national capacity to appropriately and innovatively respond, through research, to the various demands of globalisation, localisation and transformation, in the context of a rapidly changing knowledge economy.

The national review had two fundamental purposes: (1) it enabled institutions to evaluate their quality assurance arrangements for the provisioning of doctoral studies against the national benchmark standard, and (2) the production of an evaluative report on the national state of doctoral provisioning in South Africa. Although the object of the review was not the institution, the institutional context is of significance insofar as it should create an environment for good quality doctoral studies. The review evaluated the offering of doctoral degrees against the national Doctoral Qualification Standard in order to make an informed

judgement in terms of the requirements of the Higher Education Qualifications Sub-Framework (HEQSF) – the fitness-for-purpose of the offering(s) – and in terms of the national and institutional context for doctoral studies (their fitness-of-purpose). The latter implies that the qualification is consonant with the mission, vision, and goals of the institution.

The CHE appointed a team of five senior academics to write the National Review Report, drawing on the individual reports from the 28 institutions. The National Report provides a comprehensive composite national picture of doctoral studies and qualifications based on the 28 Review Panel Reports. The National Report includes, in respect of each section of the Standard, appropriate summation of each of the institutional reports, as well as an overview of emergent findings, that incorporate features such as strengths, shortcomings, concerns and constraints.

The Report also provides recommendations that, if implemented, have the potential to significantly advance the quality of the doctoral qualifications that are offered by higher education institutions in South Africa. The recommendations are listed in terms of their pertinence for institution Councils, Senates and Management to consider, and those pertinent for other stakeholders beyond the institution. The inclusion of these other stakeholders is essential, given the leading influential role they play in the support of our academic institutions and shaping thought leadership in our country and beyond. The recommendations contained in this report reflect informed and considered proposals for the improvement and enhancement of doctoral provisioning in South Africa.

The review process commenced with the development, of the Qualification Standard for Doctoral Degrees by a Standards Development Reference Group of independent academic peers. The Standard is the threshold, or benchmark, against which qualifications have been assessed.

The review focused on all Doctoral qualifications, whether General or Professional, and whether read through thesis, publications, or creative performance. The Qualification Standard for Doctoral Degrees was the sole benchmark, and evaluation was made according to the extent to which an institutional qualification met the Standard.

It is worth noting that the national review was conducted under strict lockdown regulations emanating from the COVID-19 pandemic. The lockdown restrictions created significant challenges in the sector, especially for campus-based academic activities and on-going projects and tested our collective resilience and ability to adapt to the conditions imposed by the pandemic.

Despite the lockdown restrictions, the review was concluded successfully in accordance with pre-arranged schedules. The CHE had put measures in place to ensure that the shift from the originally planned physical to virtual site visits did not compromise the integrity of the review process, and ultimately its outcome.

Following the submission of the Self-Evaluation Reports (SERs) in March 2020, desktop evaluation of the SERs began from August to September 2020. This was later followed by a series of virtual site-based peer evaluations conducted in the period between September and November 2020, over a period of 3-5 days depending on the size of the institution. The virtual site visits lasted for 6 weeks, during which over 4500 participants were interviewed. The interviewees included senior management, leaders of doctoral studies, supervisors, examiners, administrative staff, support staff, students, and graduates, as well as perusal of supporting documentation provided at the request of the panels.

Based on the findings and recommendations from the national review, every institution that participated in the review was required to submit an Improvement Plan to the CHE. During the period of the implementation of the Plan, institutions are expected to submit periodic progress reports and the CHE will monitor the implementation of the Improvement Plans to their successful conclusion.

On behalf of the CHE, I would like to thank the NRF for walking with us through this exciting journey from conceptualisation and the final stages of this project. I would also like to thank our group of experts, including the Reference Group for their contribution in shaping this piece of work.

It is our hope that the Doctoral Review and its findings and recommendations, and the implementation of the improvement plans that emanate from it will contribute to strengthening doctoral qualification provisioning in South Africa.

ACKNOWLEDGEMENTS

The report is a product of a collaborative effort of many key stakeholders in the higher education sector. In particular, the CHE acknowledges with gratitude the support that was received from the NRF through its funding of the development of the Qualification Standard for doctoral degrees, which was used as the national benchmark for the national review.

Acknowledgement and sincere gratitude are also due to all those who provided invaluable contributions throughout the national review process, particularly the following:

- The National Report Writing Team dedicated their valuable time over a period of six months analysing and reflecting on the massive volumes of information and was able to get this report completed on time, despite working under Covid-19 lockdown restrictions. While the primary source of information was the 28 institutional review reports, the Team also invested an incredible amount of time perusing complementary information in an effort to get clarity, confirm details, and in some instances extract further information to understand contexts.

    - Professor Andrew Leitch – (Coordinator)
    - Professor Stephanie Burton
    - Professor Isaac Ntshoe
    - Dr Andrew Kaniki
    - Professor Rocky Ralebipi-Simela (Deceased)

- The first draft of the National Report was reviewed by two critical readers appointed by the CHE. They provided valuable comprehensive and constructive comments that strengthened the final Report.

- The Review Panels availed themselves for extensive periods of time under the most stringent lockdown conditions. The panel members and panel chairpersons provided much-needed peer-based expertise and insight to the national review process. The CHE sincerely thanks all panel members and chairpersons for their commitment and contribution.

- This national review project was a success largely due to the cooperation and support received from the 28 participating higher education institutions who willingly opened up their provisioning of doctoral qualifications to external scrutiny. The institutions persevered and honoured their commitment to the process despite the inconveniences and uncertainties created by the lockdown restrictions. They also availed their staff (academic and support) who worked beyond the call of duty in different capacities to ensure the success of the national review.

- The Qualification Standard Development Reference Group, for the drafting of the standards statement during the period 2017-2018. The review process commenced with the development the qualification standard, which was the only benchmark against which qualifications have been assessed. The Reference Group also provided invaluable contributions during the initial stages of the national review process, including defining and clarifying the scope of the review, conceptualisation, and development of review instruments, such as guidelines and templates used in the review.

- Oversight of the national review was provided by Council, the Higher Education Quality Committee and its sub-committee, the National Standards and Reviews Committee, which ultimately resulted in approvals of the institutional reports, the improvement plans flowing from them, and the approval of this national report.

- The CHE also acknowledges the leadership of Ms Olivia Mokgatle and work of the staff members in the National Standards and Reviews Directorate which enabled the national review project to be managed to a successful conclusion.

Section 1

INTRODUCTION, BACKGROUND AND CONTEXT

1.1 Introduction

The Council on Higher Education (CHE) as the Quality Council for higher education is, among other things, responsible for the quality assurance of the qualifications on its sub-framework, the Higher Education Qualifications Sub-Framework (HEQSF), which it discharges through the Higher Education Quality Committee (HEQC).

South Africa has 26 public universities, of which there are 23 that currently offer doctoral qualifications[2]. There are also five private institutions in South Africa which offer doctoral qualifications.

A national review of doctoral qualifications arose from discussion between the CHE and the National Research Foundation (NRF). In fulfilling its mandate of Human Capital Development (HCD), the NRF has several funding instruments that support the doctoral degree. However, in making these investments, the NRF needs to be assured that doctoral qualifications offered by the 23 South African public universities and five private higher education institutions meet national quality standards for doctoral degrees. The NRF proposed that the CHE undertake a review of the doctoral qualification in South Africa. The NRF suggested that, while there was a need to increase the number of doctoral candidates and graduates nationally, the emphasis ought to be placed primarily on quality assurance at this level of postgraduate study.

The quality of the doctoral qualification is of critical importance, not only to the NRF and the CHE, but also to the public, the institutions awarding doctorates, and their students. Quality has impact in a number of ways: on international comparability, competitiveness and mobility; on the preparation of future researchers and their likely research output; and on national capacity to respond, through research, appropriately and innovatively, to the various demands of globalisation, localisation and transformation, in the context of a rapidly changing knowledge economy.

In response to the request of the NRF, CHE began the process in 2017 with the appointment of the Doctoral Degrees Reference Group (hereafter, the Reference Group) coordinated by the CHE Directorate of Standards and National Reviews, and comprising academic experts in higher education. The Reference Group designed a national ***Qualification Standard for Doctoral Degrees*** (hereafter referred to as the Standard, included in this Report as Annexure B). Following dissemination for public comment and subsequent revision, the Standard was approved by the HEQC on 8th November 2018. It is this Standard that establishes the benchmark against which doctoral qualification offerings were assessed through the National Review of doctoral qualifications.

The 28 higher education institutions (HEIs) in South Africa that currently offer them were requested to prepare for a review of their doctoral qualifications. A list of the institutions is presented in Annexure A. The intention of the review was to ascertain the extent to which the doctoral qualifications being offered by the institutions meet the threshold described by the Standard. Following extensive discussion through workshops and training involving academics and university administrators responsible for

2 *Three public universities - University of Mpumalanga (UMP), Mangosuthu University of Technology (MUT) and Sol Plaatje University (SPU) - do not currently offer doctoral qualifications and were therefore excluded from the Review.*

and involved in the training, supervision, planning for and management of doctoral qualifications, each institution completed and submitted its Self-Evaluation Report (SER) for consideration by the CHE during 2020.

The CHE established a Review Panel for each institution, to consider the SER. Full access was provided to each Review Panel to the institution, through a pre-arranged site visit[3] and access to further information as required. The Reports from the Review Panels were considered by the CHE (through the National Standards and Reviews Committee - NSRC - and the HEQC) for approval. Following this process, the CHE engaged separately with each institution with regards to the outcome of the review. Furthermore, each institution was required to prepare and submit to the CHE an institutional Improvement Plan (including timelines, milestones and deliverables) that addresses all the findings in the Review Report.

The CHE appointed a team of five senior academics to be writers of a National Review Report, to summarise the individual reports from the 28 institutions. The intention of the National Report is to provide a comprehensive overview of the state of provision of the doctoral qualifications that are being offered in South Africa, as reported by institutions through their SERs, and assessed and reported by Review Panels. It is hoped that this Report will be of benefit, for the maintenance and development of quality assurance, to all interested parties, including the general public and managers, supervisors, assessors, examiners and students of doctoral qualifications. It is also hoped that this National Report will guide other institutions - both in South Africa and perhaps also further afield – that are intending to offer doctoral qualifications in the future.

1.2 Terms of reference

1. The terms of reference provided to the Writing Team were as follows:
   - The report must be informed by:
   - The Higher Education Qualifications Sub-Framework (CHE, 2013)
   - Qualification Standard for Doctoral Degrees (CHE, 2018)
   - Manual: National Review of Doctoral Qualifications (CHE, 2019)
   - Review Panel Reports (23 public and five private institutions)
   - Emerging themes and observations endorsed by the NSRC.

2. The National Report provides a comprehensive composite national picture of doctoral studies and qualifications, including qualitative and quantitative aspects, based on the 28 Review Panel Reports. While the detailed structure of the report will be determined by the Writing Team, it will take into account the scope and the format of the Qualification Standard, the SER template and the Review Panel Reports, ensuring that each section of those documents is appropriately dealt with.

3. The Report includes, in respect of each section of the Standard, appropriate summation of each of the institutional reports, as well as an overview of emergent findings, that incorporate features such as strengths, shortcomings, concerns and constraints.

4. Within its scope, the Report addresses certain matters that have arisen during the review process. These include, but need not be limited to, themes and observations identified and endorsed by the NSRC.

5. Based on its findings, the Report provides recommendations that should be considered at either or both institutional and national levels towards the quality assurance and enhancement of doctoral studies in the country.

Although the Writing Team had some leeway and was expected to provide some discussion about what the expert Review Panels (and institutional SERs) reported, and to provide the basis, justification and/or professional authority for their opinions and recommendations that have been advanced in this consolidated Report, it was not expected that such discussion would include detailed exposition of each of the issues and elements of findings. It was the interpretation of the Writing Team that the ToR for the Report required lifting or systematically percolating the key findings and advancing recommendations. The Writing Team and, indeed, the stakeholder community, are aware of the various expert expositions, research analyses and policies that

3 Due to the COVID-19 pandemic restrictions, virtual site visits were conducted online.

are specifically South African and also international, that address many of the issues that are reported in the findings, which are consolidated and advanced as recommendations in this Report.

It is expected that individual institutions, and the South African higher education system collectively, will reflect and systematically work through the complex issues associated with summarised findings and recommendations to fit individual institutions and the system at large. For instance, institutions are required to have policies in place for the selection and appointment of examiners with appropriate structures and procedures to ensure compliance, fairness and consistency across the institution. This Report does not go into the detail of the process for developing the policy and the form and structures required to implement and support such policy. It is expected and anticipated that either the CHE, USSAf, institutions individually or collectively will address the details of such policy and its consequences. It must also be noted that while this Report provides recommendations, these cannot be directives or prescriptions. Rather the CHE and, indeed, the HEI community, will need to assess the criticality of each of the recommendations. Indeed the Report may strongly present some recommendations and others may simply receive mention.

1.3 Process followed

The five members of the Writing Team were provided with access to all 28 Review Panel Reports, as well as the individual SERs (with accompanying addenda) from each institution. While the primary source of information remained the Review Reports, the SERs provided complementary information and were used where necessary to confirm (or clarify) detail, to extract further context, etc.

A particular challenge faced by the Writing Team was to find a way of accommodating the different styles and approaches taken by each of the 28 Review Panels, as expressed in their individual reports. While each Review Panel received the same preparational training before the Review commenced and used the same template, a cursory glance across the 28 reports will immediately reveal differences in style and levels of detail and analysis. Some reports went into great detail and provided comprehensive support for statements made, while other reports were less meticulous in this regard. Some reports expressed strong views on a matter while other reports tended to be less critical. All this led to some reports being considerably longer than others - more than double the length, in a few cases. Of course, this is to be expected, given that the 28 Review Panels were drawn from different academic backgrounds, with different experiences and expectations that perhaps reflect the unevenness across the sector.

The challenge thus for the Writing Team was to find consistency amongst the reports and not to focus on the outlying views. There were some occasions where, as the Writing Team, we felt compelled to offer an alternate view to what some (or many) of the Review Panel reports suggested. This was mainly in Section 8, where we discuss "Above-threshold Practice and Areas for Improvement". Our views could well be interpreted as a critique of individual Review Panel judgements. We would prefer that our views are seen as the culmination of in-depth analysis and reflection of all the information available, over a period of six months. Our sincere hope is that the views expressed will be considered on merit by each institution.

We prepared the first draft of this Report during the period August - November 2021. This period happened to overlap with the period (August to October 2021) when each institution was tasked with working on its Improvement Plan (mentioned above). It must be stressed that while these two processes overlapped in time, they were completely independent, with neither having any influence on the other. In other words, institutions prepared their Improvement Plans without any knowledge of the content of this Report and, similarly, this Report was prepared without any knowledge of the contents of any of the Improvement Plans.

The first draft of this Report also benefited from the valuable comments of two critical readers appointed by the CHE.

As may be expected, the doctoral review has highlighted many examples of good practice for which higher educational institutions may be justly proud. Understandably, the review has also exposed areas of concern that need to be addressed. While the key concerns and recommendations are summarised in Sections 10 and 11 respectively, they are also highlighted in the relevant sections of the text, in order to draw the reader's attention to a specific concern or recommendation alongside the findings that led to it.

Section 2

DOCTORAL QUALIFICATION TYPES

2.1 Introduction

According to the Standard, the Higher Education Qualifications Sub-Framework (HEQSF) provides for the following two variants of the doctoral qualification that may be offered by academic institutions in South Africa:

i) Doctoral degree (without any modifier) – also known as the Doctoral Degree (General)[4]; and
ii) Doctoral degree (with the modifier 'Professional').

The defining characteristic of the General doctorate is that the candidate is required to demonstrate high-level research capability and to make a significant and original academic contribution at the frontiers of a discipline or field. In the case of the Professional doctorate on the other hand, the defining characteristic is that *in addition to the demonstration of high level research capability* it requires the ability to integrate theory with practice through the application of theoretical knowledge (developed through accompanying coursework, with the option of accompanying work-integrated learning) to highly complex problems in a wide range of professional contexts.

While the focus of the General doctoral degree was originally understood in terms of the provision of education and training more aligned with an academic career, it has since been recognised that the national and global labour market for doctoral graduates has expanded beyond that of an academic career. The Professional doctoral degree on the other hand is focused more towards a career in the professions and/or industry and is designed around the development of high-level performance and innovation in a professional context.

Irrespective of the variant, both the General and the Professional doctoral degrees must demonstrate the same level of research-related intellectual achievement at the exit level. Both variants of the qualification are awarded at NQF level 10, emphasising their equivalence with reference to the Standard. In this regard, it is worth emphasising that the Standard statement is a *threshold* statement that establishes minimum criteria for the awarding of the doctoral qualification - *irrespective of the variant*.

The minimum number of credits allocated to the qualification is 360, all credits being at NQF level 10. According to the HEQSF, if one rates 10 notional study hours as equivalent to one credit, and if one assumes a 45-week full-time academic year for doctoral studies, the 360 credits for the doctoral qualification reflect two years' full-time study as a minimum time period necessary for the completion of the qualification.

In the case of a doctoral degree awarded entirely by research, all 360 credits are allocated to the thesis (that is, all credits are allocated integrally). There is no sub-allocation to various aspects of the research work, such as the research proposal or the literature review.

4 *In the HEQSF this variant, unlike the Professional variant, is not accompanied by a modifier. The modifier 'General' is used here simply for convenience, to distinguish it from the Professional variant. No connotations beyond the specifications in the HEQSF are implied by the use of the term, nor does it imply any limitation on specialisation, as reflected in designators and qualifiers.*

In the case of a doctoral degree (Professional), a combination of coursework and research is required. All credits, including any credits allocated to coursework and/or work-integrated learning, are awarded at NQF level 10. The research component should comprise at least 60 percent of the credits for the degree. Work-integrated learning would normally be credit-bearing and must be integral with the topic of research.

2.2 The current status in South Africa

The Self-Evaluation Reports (SERs) revealed that the overwhelming majority of the 28 academic institutions that offer the doctoral qualification offer only the General doctoral degree. Indeed, there were only three institutions that have the Professional doctoral degree registered by the South African Qualifications Authority (SAQA) and, of these three institutions, only two are actually offering the Professional doctorate currently. The third institution indicated future plans to introduce the Professional degree.

In spite of the extensive re-curriculation that has taken place at most institutions across South Africa in recent years, there has been very little take-up of the Professional doctoral variant in the country. To understand why the majority of institutions only offer the General doctorate, one can consider the following:

- The historical context of the educational landscape in South Africa: the General doctorate was for many years the only variant that was recognised by SAQA for registration as part of an institution's Programme and Qualification Mix (PQM) in South Africa. It was only in 2013, when the HEQSF was promulgated, that institutions were for the first time provided with the opportunity to offer the two variants of the doctoral qualification.

- While the Standard emphasises the equality of the two variants, there may be the perception that the Professional doctorate is not quite at the same level as the General doctorate, and that it is perhaps academically inferior. This perception may be especially prevalent amongst students, the professional bodies, and society at large.

- Extra effort would be required on the part of institutions in order to offer the Professional doctorate in addition (or as an alternative) to the General variant. In addition to the requirement of an original thesis (or another form of research) comprising at least 60% of the credits for the degree, the Professional doctorate requires the inclusion of specialised coursework modules at NQF level 10, with the option of appropriate forms of work-integrated learning. All this as well as other logistical challenges would require far more effort on the part of academic faculties as well as administrative support structures. For example, the requirement of the coursework being relevant to the topic of the research would imply that the coursework could properly be designed only once the research topics had been approved and some similarity between topics had been found - and this would hold for each student.

- At doctoral level, the student is usually accepted to be already fully conversant with the need for self-study. In this sense, one may assume that any new understanding or analytical technique that the student may need to undertake can be accessed by the student on their own, through self-study, and (where necessary) through consultation with appropriate specialists, thus reducing the scope for formal modules offered at NQF level 10.

In spite of the challenges linked to the offering of the Professional doctorate, those institutions who choose this option and commit to the offering of this variant as part of their PQMs are likely to reap the benefits in the long term. Possible benefits may include the uniqueness of the qualification and its favourable acceptance by professional bodies in fields such as engineering, law and health. This is one of the recommendations mentioned in Section 11.2.

It is worth noting that some institutions, in their SERs, used the terminology 'professional doctorates' when they referred to doctoral studies directed specifically towards advances in a professional field (such as Law and Engineering). As much as the theses may have had a focus relevant to the professions, they formally remained HEQSF-aligned general doctorates, as the degree was conferred entirely on the basis of the successful examination of a thesis (even if the focus was directed towards one of the professions).

To avoid any confusion about the two doctoral variants in this Report, when we refer to the doctoral degree (without any modifier), we are referring to the General doctorate. In those instances when we specifically wish to discuss the doctoral degree (with the modifier 'Professional'), we will refer to the Professional doctorate.

It needs to be stated that the HEQSF currently also allows for an additional type of doctorate, the **Higher Doctorate**, also known at some institutions as the Senior Doctorate. The naming (and abbreviation) of the higher doctorate can create some confusion in academic circles and broader society. The name is actually a misnomer, as it is awarded at the same NQF level 10 as the General and Professional doctorates just described. The HEQSF states that "*...the Higher Doctorate, may be awarded on the basis of a distinguished record of research in the form of published works, creative works and/or other scholarly contributions that are judged by leading international experts to make an exceptional and independent contribution to one or more disciplines or fields of study*".

The Higher doctorate is not a qualification for which one registers and therefore is not within the primary focus of this Report. It is mentioned here purely for sake of completeness, given that three institutions indicated in their SERs that they award a Higher doctorate. However, the clarity (in terms of the policies and procedures related to the offering of this qualification) differed from one institution to the next. In fact, one institution did not even have institution-wide policies to offer the Higher doctorate; rather, faculties were allowed to decide what constituted the requirements for awarding the Higher doctorate. In that case, the Review Panel recommended that either the institution does away with this qualification or improves its offering by ensuring there are policies, procedures and rules governing its existence.

The Higher doctorate will not be further mentioned in this Report.

2.3 Designators and Qualifiers

Significant restructuring of the public higher educational sector took place in South Africa during 2000-2005, with numerous incorporations and mergers resulting in the establishment of fewer, but generally larger institutions (discussion of the resultant typology of the higher education sector following the mergers is presented in Section 4.2 below). The result was that many institutions inherited an extensive array of separate discipline-based doctorates that emanated from the legacy institutions. Following the promulgation of the HEQSF in 2013, institutions embarked on re-curriculation processes to ensure alignment of their PQMs with the vision and mission of the institution. While this process afforded each institution the opportunity to update their doctoral offerings, a study of the SERs suggests that in the case of some institutions this process remains ongoing.

For some institutions, the nomenclature makes it difficult to discern differences (if any) between some of the General doctoral degrees that have different qualifiers and/or designators.

Examples may be cited in the fields of engineering, law and education. Using engineering as an example, is there a difference between the Doctor of Engineering (DEng) and the Doctor of Philosophy in Engineering (PhD (Engineering)) that are offered in the same faculty at the same institution? The DEng and the PhD may have different designators but are in the same broad field of study (engineering). It may be that the different names for a doctorate in the same broad disciplinary field reflect pre-merger history for the institution. On the other hand, it may be that the different names reveal an attempt by the institution to distinguish between more fundamental research and more applied research in the field of engineering – *in spite of the two qualifications being formally recognised as General doctorates at the same NQF level.*

Of course, the inclusion of a qualifier can identify quite different fields of study and in such cases is justified. Thus, a PhD in Engineering is quite different from a PhD in Physics, signalled by the different qualifier (Engineering versus Physics). On the other hand, the use of the qualifier can lead to overspecialisation of the name of the qualification for the field of study. An example would be for an institution to offer a PhD in Optics, when it already offers a PhD in Physics (given that Optics is a recognised sub-field of Physics).

Recommendation

To avoid the possibility of ambiguity or confusion (as well as the likely proliferation of names with time), it is recommended that the higher education sector adopts a more rational, structured and defensible approach in the use of qualifiers when considering the naming of doctoral qualifications (including their abbreviations).

The focus of this review has been on the **qualification**, irrespective of the designator and/or qualifier used to define the doctoral qualification.

Section 3

PREPARATION OF THE SELF-EVALUATION REPORT

3.1 Introduction

Unlike all previous reviews conducted by the CHE, this National Review of doctoral qualifications offered by HEIs in South Africa emphasised two aspects. Firstly, it focussed on an entire qualification type, awarded in all fields of study and disciplines. Secondly, the review was intended to provide each institution with an opportunity to measure or assess its doctoral qualification(s) against a qualification standard. Therefore, this was not a re-accreditation exercise. It is important to note that the review was to be seen as an encouragement for HEIs to conduct a transparent self-evaluation. HEIs were invited to draft their own improvement areas and timelines.

To facilitate the second focus of the review, the CHE with the assistance of the Reference Group (as described in section 1.1) developed the SER template. The SER was a critical document and part of the whole review process. Institutions presented SERs in a narrative form, reporting findings at an aggregated (institutional) level, based on studies in all fields and disciplines referring, where appropriate, to specific illustrative examples selected from various faculties, schools and departments. The SERs were also expected to cover all protocols, policies, regulations and practices relevant to the qualification. The institutional SER was primarily used by the Review Panel to generate questions and lines of enquiry used during the institutional site visits.

It is therefore imperative that this National Report reflects on the SERs submitted by institutions. This section of the Report summarises and presents an analysis of how institutions approached the Review and, in particular, the preparation of the SERs and impressions of the Review Panels that examined SERs prior to and during site visits. The section does not present the detail of what the SERs presented about their doctoral offerings. Data and information in this analysis are aggregated, but where necessary and appropriate data emanating from specific groups of institutions are given, including highlights of examples, without mentioning names of individual institutions.

3.2 Description of SER Process and Endorsements

Participation in the preparation of institutional SERs by key stakeholders of doctoral qualifications (students and doctoral alumni; supervisors/mentors; examiners/assessors; heads of departments; deans; postgraduate academic administrators; quality assurance/promotion staff; and senior management/executives) was considered a very important aspect of the whole national doctoral review process. This was partly because the CHE and the doctoral review Reference Group were of the view that the different voices of persons associated with the doctoral qualification would provide different perspectives and own-experiences of and about the doctoral qualification and would therefore enrich the review process. Furthermore, inclusivity of the different stakeholders of the doctoral qualification in the preparation of the SER was considered to be a developmental exercise for inexperienced and/or early career academics, HEI managers and executives, that provided the opportunity to learn key aspects of doctoral qualifications and qualifications development, and review. Generally, this also included the opportunity to share experiences across faculties, other academic units and support departments. The institutional engagements became a change

management tool for all stakeholders to understand the value of their contributions to the quality experience of doctoral students and to further reflect on the challenges experienced by institutions in an ever-changing higher education landscape.

Thus, a key aspect of the presentation at the CHE regional workshops of 2019, that were aimed at briefing institutions about the planned national review and its process, was the conversation about the purpose for and preparation of the SER. The workshops also emphasised and encouraged institutions to involve the various stakeholders of the institution in the preparation of the SER. HEIs nominated a number of academics and managers to attend these regional workshops. The CHE documents and communication that followed after the regional workshops and shared with HEIs reiterated information about the SER preparation process and suggested content. The SER template itself required institutions to describe the process involved in self-evaluation, including details of any meetings and workshops that accompanied the drafting of the document, the range of participatory activities involved (formal entities, *ad hoc* groups, etc.), and the process of formal institutional approval. In addition, a cover page for institutional endorsement of the SER, with the signature of either the head of the institution or their delegated authority, was provided by the CHE as part of the SER template.

Almost all the 28 HEIs that offer doctoral qualifications, and were involved in the National Review, provided written descriptions of the processes that they followed to prepare SERs. There were two HEIs who did not include such a description. In spite of this, however, the Review Panels that conducted the site visits to those institutions interacted with stakeholders, verified the process taken in the preparation of the SERs and reported this in their Review Reports. All HEIs accompanied their SER submissions with a signed/endorsed title page that had been provided by the CHE. In all cases these were endorsed and signed by either the head of institution, i.e. the Vice-Chancellor / Principal or delegated Deputy Vice-Chancellor (DVC) and, in a few institutions, the Registrar. For most institutions, the endorsement followed elaborate approval processes including faculty boards through Higher Degrees Committees (HDCs), Senate/Senex and in some instances even endorsement by university councils. This suggested that heads of institutions took this process seriously and understood or were at least aware of the contents of the institutional SERs, including of course the self-measurement or assessment of the institution's doctoral qualification(s) against the national Standard. The detail and length of descriptions of SER preparation processes varied from institution to institution, from a paragraph to a few pages. While the SER required institutions to describe their SER preparation process and provide information about their doctoral qualifications, the review process as designed by the CHE was cognisant of the fact that the details of these SERs may vary from institution to institution. Review Panels were able to request additional information if required, prior to the site visits. The majority of HEIs organised institutional kick-off workshops or meetings for the preparation of the SER. In many cases the SER preparation kick-off meetings were organised by either the offices of DVCs responsible for research and innovation or teaching and learning or the Quality Promotions or University Academic Planning units. In a few cases Vice-Chancellors/ Principals attended and initiated these workshops. They expressed support for and, in essence, elevated the importance of the preparation of the SER to the national review process. DVCs, faculty Deans, academics and in particular those involved in the supervision of doctoral students, academic quality promotions and academic planning staff attended these meetings.

Over two-thirds of the Reports of the Review Panels observed a glaring absence of doctoral students and doctoral graduates/ alumni at these workshops. Perhaps this was to be expected because of time limitations and logistics required to mobilise students and especially alumni. Nonetheless, seven institutions reported that, once the process of preparing for the SER had been completed and the process of data and information collection for the SER had begun, a sample of doctoral students and alumni were consulted and they made inputs. One institution reported that it had instituted an elaborate two-stage student and alumni consultation process involving focus groups and a survey of close to 200 doctoral graduates who had completed their studies one to three years prior to the National Review. Another institution indicated that three or four students were involved in a focus group meeting for the collection of data. Three institutions stated that an online questionnaire was prepared and distributed via email to collect information from current doctoral students and graduates. Another HEI stated that student representatives (with the evidence of student names provided) participated in the preparation of the SER. One HEI conducted two focus group interview sessions, one with research supervisors and research professors and the other with doctoral students. Another institution reported that documents were distributed to doctoral holders, and staff members who were completing their doctoral studies within each Faculty, for initial input and suggestions.

The purpose of the institutional kick-off workshops was to explain the National Review process and, in particular, the purpose and process for preparing the SER. Where they occurred, institutions used the kick-off meetings to discuss and agree on the

internal process(es) for the preparation of the SER; appointment of *ad hoc* multi-faculty and unit reference groups/committees and/or SER working groups; and/or agreements/confirmation of the offices/persons to drive the process of the preparation of the SER and timelines. Time-consuming and unwieldy as these consultative approaches tend to be, these were positive approaches by institutions because there was more likelihood for the various stakeholders taking collective ownership of the process, the outputs and outcome.

In the majority of cases HEIs developed and adopted project management plans and protocols for the preparation of the SER. In almost all cases, HEIs set timelines in targeting the CHE submission date and scheduled meeting/internal deadlines. In a few cases HEIs presented flow-charts of the process followed in the preparation of SERs. This made it easier for the Review Panel to see the SER process at a glance and, of course, provide lessons and record for future similar processes. Two-thirds of the HEIs opted for faculty-based teams to draft faculty-level SERs that were subsequently discussed integrally and consolidated into the institutional SER. In some cases DVCs appointed members of SER task teams, while in other cases, faculties nominated representatives to these task teams/working groups. Faculty Doctoral Review task teams and/or combinations of institutional reference groups and steering committees, used as sounding boards for the task teams, conducted consultative processes and meetings, with the drafting of the SERs going through several iterations.

In a few cases, Review Panels observed that the description of the processes of preparing the SERs could have been more comprehensively explained and that it was not clear from the SERs whether all the faculties and/or academic entities in the HEIs used this opportunity to reflect on the content. The impression created in these few cases was that the SER preparation was an administrative process, with limited reflection and ownership by the faculties, schools and departments. There also appeared to be initial resistance to the responsibility of yet another accountability regime being added to the already onerous duties of the senior structures.

During the interviews in the course of the site visits by Review Panels, further information and clarity were provided as and where appropriate. Some interviewees confirmed that they had discussed the SER before it was submitted to the CHE. In certain cases in the same institutions, other interviewees stated that they had no knowledge of the SER, and yet others contradicted various aspects of it in their responses. In a few of these cases the Review Panels concluded that the SERs were drafted in isolation from the main role players responsible for doctoral studies, and also that the higher bodies like the Senate of the institution had not engaged with the report. A challenge experienced by some faculty SER writing teams was that inexperienced staff were included in the writing of SERs. This led to a slow start to the process in some faculties and, in others, initial meetings had low attendance, or a changing composition of the faculty SER writing team. The faculty SER writing teams took time to establish a rhythm and to find a balance between the variable inputs of the members. Review Panels observed that in some institutions, some of the faculties were simply not inclusive. In other cases the faculties (even within the same institution) "abandoned" the idea of SER teams and a few people or an individual took the responsibility to prepare the faculty SER. These challenges experienced in the preparation of the SERs are likely to affect the quality assurance of doctoral training programmes of individual institutions, to varying degrees. It is therefore important that individual institutions consider the implications of these challenges in respect of quality assurance and, where appropriate, address them.

In spite of these challenges that were experienced in some institutions, the collective and iterative approach used for the preparation and approval of the SERs at the majority of HEIs gave some comfort about the manner in which most of the institutional SERs were developed. The challenges highlighted in the Review Reports present lessons of what to avoid and or how best to approach these kinds of consultative processes in future. Almost all institutions submitted the final versions of the SERs by the CHE-set deadline in preparation for the Review Panels and site visits.

The principal benefits of the SER preparation process were obvious. It provided the opportunity for each institution to interrogate its own practices and triangulate views and opinions of the effectiveness of these practices. It was also an opportunity for institutions to "take a measure" of their approach to quality assurance at the doctoral level (post earlier institutional audits) and, through strategic engagement with staff, students and graduates who have had recent exposure to other institutional practices, develop improvement gleaned from those institutions. Another benefit was the opportunity for institutions to identify areas of policy creep, where practices have strayed from policy - for good or bad - and the need to respond through processes like advocacy and revision of policy and practice.

Furthermore, the SER preparation process provided opportunity in many aspects: for training young academics/managers in the preparation of SERs; understanding across-faculty differences; appreciating in some cases the strengths and weaknesses of the same qualification offered across an institution; verification of policies and practices across faculties; and, hopefully, collective ownership of the institutional doctoral qualification. The lessons of inclusivity and institutional training/development, the need for employing a formal project management style, and the leadership of heads of institutions or designated executives, cannot be overemphasised for the smooth running of this process. The challenges experienced in some institutions, within faculties or other academic entities, also present lessons to HEIs of what must be avoided in similar exercises.

3.3 Appendices providing data

With regard to institutional data, The National Review Manual: Doctoral Qualifications (April 2019) stated (page 9): *"For each section and sub-section of the template, the SER should include sufficient description and analysis, backed up with requisite quantitative data (as specified in the appendices to the SER template) to support claims made in the institutional self-evaluation"*.

The requested annexures to the SER included the following:

- PQM data for the institution
- Student information (admission criteria and registration)
- Staff profile and supervisory capacity
- Information on student progress
- Throughput and graduation rates.

A study of the SERs indicated that institutions responded very differently, in terms of the comprehensiveness, clarity and consistency of the data that was provided in the appendices. Further, while some institutions responded in a positive and reflective manner by critically interrogating their institutional data (and highlighting key trends), other institutions appeared to respond to this section with more of a compliance approach, attaching the institutional data as required but offering little to no meaningful discussion. Surprisingly, few institutions commented on their internal capacity for the interrogation of their institutional data, even though this may indeed be a limitation for some.

3.4 Other remarks

Although the Standard does not explicitly refer to the issue of international and national narratives of decolonisation, a few institutions and Review Panels (for specific institutions) raised the lack of engagement related to institutional policies and practices on a decolonised, transformed doctoral qualification in general and in the social science fields in particular. The Review Panels at these institutions, in particular, noted insufficient recognition of South and Southern contexts, including scholarships of the South, African epistemologies, and encouraging the writing of doctoral theses in an African language. This is despite the fact that some of the institutions professed to be championing these narratives in their SERs.

Section 4

INSTITUTIONAL CONTEXTS AND THE PURPOSE OF THE QUALIFICATION

4.1 Introduction

To understand and fully appreciate the state of doctoral qualifications as established by the National Review, it is important to recognise the context and/or environment within which South Africa's HEIs (both public and private) that offer the doctoral qualification have operated over the years. A number of publications, either issued by the CHE itself or other stakeholders of the national system, including ASSAf, individual researchers and others, have provided some descriptions and analyses of the higher education context. In recent years, publications have included: ASSAf, *The PhD Study (2010); CHE, South African higher education review: two decades of democracy (2016); Cloete, Mouton and Sheppard, Doctoral education in South Africa: policy, discourse and data (2015); and so forth.*

This section provides a short history of the context in which HEIs have offered and delivered doctoral qualifications. The SER template required HEIs to (a) describe the history and scope of the institution's offering of doctoral qualifications, and (b) describe and evaluate the alignment between the doctoral qualifications offered by the institution and the institution's context, mission, goals and strategic plan. SERs also required HEIs to provide information about the purpose of the qualification, and how the institutional context is aligned with it.

According to the Standard, institutional contexts refer to the protocols, policies, regulations and practices relevant to the offering of doctoral qualifications. Additionally, it refers to the infrastructure in place to support doctoral degree provisioning. This would include not only availability of laboratories, libraries and other learning spaces, but also access to the internet, including the ability to use it (digital literacy tools and skills). The attainment of quality graduate attributes mentioned in the Standard and discussed in Section 6 below is highly dependent on the institutional contexts of HEIs offering doctoral qualifications, and the environment and infrastructure that they can provide. Furthermore, the alignment of the Purpose Statement with the mission, vision, and strategic plans of the institution is critical to the quality and relevance of individual doctoral qualifications.

Quality is judged by the degree to which the institution is applying quality assurance oversight to the entire doctoral studies process, including:

- The way screening and selection processes and also pre-registration preparedness programmes assess the readiness of a candidate to engage with learning at doctoral level;
- The standards for acceptance of the proposal and progress monitoring;
- The availability of a supervisor with relevant qualifications and experience as well as a supervisory process that is able to support doctoral-level learning;
- The extent to which, at exit level, the doctoral graduate is able and ready to develop a research career (including but not limited to employability);
- The way the thesis demonstrates the achievement of relevant graduate attributes, as confirmed in examiners' reports; and

- Peer acceptance of any outputs resulting from the doctoral research (journal articles, citation rates, patents, etc.).

In applying oversight of doctoral studies, an institution needs to give meaningful expression, as part of appraising institutional culture operational at all levels, to the cycle of quality management processes: implementation, operation, review and revision.

4.2 Observations on the recent context of the higher education sector

Most of the HEIs in South Africa have undergone significant changes in their histories and institutional cultures as a result of the restructuring of the Higher Education sector. According to the Higher Education White Paper (2014), the intention of the government was to accommodate and expand access to higher education for all South Africans. These institutional changes included mergers, demergers, restructuring, re-curriculation and realignment of their qualifications with the requirements of the HEQSF, higher numbers of students, transformation of their student cohorts and staff, and innovative teaching and learning modalities. Other changes have included expectations of high academic workloads and research productivity; research and supervisory capacity challenges; funding challenges and many more. The universities have also been classified or differentiated according to their typologies and mission foci in line with the Higher Education White Paper as follows: universities of technology (UoTs), comprehensive universities; and traditional universities. Most recently, *the Policy Framework for the Internationalisation of Higher Education in South Africa* has been officially adopted, with more South African HEIs offering and awarding dual/joint postgraduate qualifications. All of these university types are involved in the offering of doctoral qualifications.

Recently, certain higher education institutions have – by self-definition, in academic studies and in the media – been defined as 'research-intensive'. While the term has often been used as a synonym for 'traditional', public status, global rankings and their criteria, and other pressures have drawn many 'non-traditional' institutions to adopt a 'research-intensive' profile. This has tended to impair the categorical differentiation envisaged by the White Paper. It may, at least in part, influence the relatively limited introduction in South Africa of the HEQSF-aligned Professional doctorate. The institutional typologies do not seem to have any impact in terms of whether a university provides a General or Professional doctoral degree. This may be, as indicated earlier, a missed opportunity and is mentioned further in Section 11.2.

In spite of the differences in institutional typologies, sizes, histories, cultures, trajectories and other differentiating factors, the application of the Standard has to be uniform across the sector. The following are key observations regarding institutional contexts supporting doctoral qualifications in South Africa as reflected in the SERs and the Review Panel reports.

As would be expected, South African institutions are at different stages of progress in terms of the extent to which they meet the Standard. The contexts range from small institutions that offer only one or a small number of doctoral qualifications to some larger universities which are offering more than 200 doctoral qualifications. They include institutions that are new to doctoral degree offerings, and some with multiple campuses at various distances, fewer staff members with doctoral qualifications and capacity to supervise doctoral students, and lack of access to reliable information from the data management systems. Such limitations have an impact on the capacity of institutions to achieve research intensity. Doctoral students' experiences differ from one campus of the same institution to another; there is, across the sector, unequal and often inadequate access to libraries and laboratories, and unequal access to bandwidth, wifi, internet and other digital information tools.

Some institutions, as Review Panel reports suggested, are challenged in terms of aligning the purpose of their doctoral qualifications with their mission statements, for many historical reasons. Yet in other cases, while the institution might have updated its mission, vision and strategic plan, the articulation of the purpose of the degree and its attendant graduate attributes may still reflect the historical mission of the HEI or is articulated in broad terms, which may not effectively reflect the uniqueness of the qualification. Institutions which referred to development plans and frameworks such as the *National Development Plan 2030, Agenda 2063: The Africa We Want, and the UN Sustainable Development Goals 2030*, appear more focused and clearer in the conceptualisation of their doctoral qualifications, and the articulation of their purpose statements are more coherent, including in terms of addressing local, national and global needs.

Many of the institutions do not seem to have made deliberate efforts to create and support effective institutional contexts for doctoral provisioning. The review process came, for some institutions, as a welcome intervention to heighten their sensitivity to quality assurance measures required for the provision of doctoral studies, and yet for others it was treated more as a compliance issue. Other observations from the Review Panel Reports indicated that, in some institutions, the SER was mostly a celebratory rhetoric rather than a reflective introspection of the institution regarding its quality processes in support of the doctoral qualification. For most of the institutions, though, the review process provided a much needed opportunity to introspect, reflect, and judge their own institutional environments in support of their doctoral degrees.

4.3 Clarity on PQMs and Credits

Observations from institutional Review Reports indicate that institutions are at varying stages of re-curriculation and compliance with the HEQSF requirements. There are those that have completed the process and have their DHET-approved PQMs indicating that all their doctoral degrees are offered at NQF level 10 with a minimum of 360 credits. These are in the majority. There are a few institutions that are still in the process of phasing out old doctoral qualifications (240 credits at NQF level 8 for example) and phasing in those that comply with the HEQSF. A few other institutions are still in the planning stages to phase out the DTechs and create doctoral qualifications that comply with the Standard. These are mostly universities of technology that have been offering DTechs (and, in some cases, still do to cater for pipeline students but no longer enroll new students). Those institutions are now required to comply, in all doctoral qualifications, with the HEQSF and the Standard.

4.4 Issues related to post-mergers and/or restructuring

The restructuring of the higher education landscape and reduction of the number of public HEIs from 36 to 23 through mergers was an extensive undertaking intended in part to overcome the worst manifestations of the apartheid system and to increase diversity within a single coordinated system in South Africa. The merger project has had its own implications and consequences generally. What follows below is an analysis of the implications in the offering and running of doctoral qualifications at SA HEIs. (It may be noted that while this Section considers various issues related to institutional contexts, some of these are discussed further in Section 7, from the perspective of supervision and assessment).

4.4.1 Alignment across campuses and sites of delivery

Institutions that have been affected by mergers and restructuring tend to have multiple campuses and, in some cases, campuses are located very far from each other in terms of distance. The distances between different campuses may in fact result in different institutional 'cultures', and some campuses may be more 'research-rich' than others. The Review Panels noted that these can provide challenges related to equality in the allocation of resources for doctoral provision, e.g., equal access to laboratories and library resources for doctoral students. Inequalities in resource allocation are, in some cases, complicated by the fact that different campuses (previously sites of universities and former technikons) were incorporated with different historical institutional cultures, and it has taken time for the different cultures to be aligned. The emerging trends indicate that the majority of institutions with multiple campuses have not been able to provide equal access to resources for their doctoral students, with the result that the quality of doctoral provision may be compromised. Indeed, some reports of Review Panels confirmed the unevenness of student experience and unequal access to resources of all kinds. Historically advantaged institutions, especially those that did not merge with others, tend not to have experienced challenges created mostly by long distances from one campus to another, as the Review Panels have indicated.

4.4.2 Alignment across faculties

In most of the institutions, there are discrepancies in the way that faculties are provided for, or are even aligned in terms of the policies, protocols, procedures and practices in the support of students in the doctoral qualifications. Some Review Panels suggested that, even though there are institution-wide policies, relatively few staff and students in faculties know about them and therefore they are applied unequally. They tend to have more knowledge of their faculty-based policies and rules, which

may differ from one faculty to another. For institutions that have centralised the management of their doctoral studies into a focused unit for Post-graduate Studies (for example, a Unit, Centre, or School), policies, procedures and practices relating to doctoral provision tend to be more aligned, thereby enhancing the student experience and improving the quality of the doctoral qualifications. The benefits of establishing such a focused entity for overseeing doctoral studies is discussed further in Section 7.3.3 and forms the basis for a recommendation in Section 11.2.

4.4.3 Staffing issues

Much has been reported in recent years regarding the staff profiles at South African HEIs. The reported trends are complex, as they vary across the broad disciplinary fields within institutions, as well as across the different institutional typologies (traditional institutions compared with comprehensives or universities of technology). The trends also depend on the physical location of the institution (urban or rural); whether the institution is historically black or white; whether the institution is historically disadvantaged or advantaged financially, and whether the institution is a public or privately-funded institution. Consequently, this Report draws attention mainly to the important general trends that are found across the majority of the institutions, as evidenced by the institutional data provided. Aspects of staffing related to workload and performance management are addressed in Section 7.

Most institutions have embarked on a process of actively encouraging academic staff to obtain higher degrees – especially the doctorate. The interventions are often supported financially by the University Capacity Development Programme (UCDP) of the DHET. The number of academic staff with completed doctorates has consequently increased in recent years, with a significant number of university staff currently enrolled for doctoral studies. This is a positive trend which represents an investment for the future and, notwithstanding the inevitable mobility of staff, will benefit the higher educational sector in South Africa in terms of capacity to offer high-quality doctoral training.

Staffing resources refer largely to numbers and capacity of supervisors and administrative support staff. Many institutions are struggling with development of new supervisors, finding ways to use effective workload strategies for academics and robust administrative support for supervisors and doctoral students. It is evident in almost all the HEIs that the increases in student numbers have put a lot of strain on the institutional systems that provide for doctoral studies. The demand for more academics with doctoral degrees and capacity for supervision is very high. The burden of teaching and research workloads on academics is also needing much attention. In Section 11 certain recommendations are made in this respect.

It is noteworthy that some institutions actively encourage administrative and professional staff (with completed doctorates) to also be research-active and to make themselves available to supervise doctoral students in their respective disciplines or fields. However, for this to be successful requires the commitment of the prospective supervisor (who is not employed as an academic *per se*), as such supervision often goes beyond the normal workload expectations for the staff member. It also requires the willingness of the academic department (in which the doctoral studies will be carried out) to embrace the idea of "outsiders" also being involved in the supervision of students in a particular discipline for which the department is recognised as the traditional custodian. Provided the support base is there, this represents a significant opportunity for institutions to grow their capacity for doctoral supervision, in the process enhancing the depth of academic endeavour in support divisions of an institution.

4.4.4 Capacity development for Doctoral students

Capacity development of doctoral students is part of the enhancement of the quality of the candidate at entry level and during their studies. Some institutions have not implemented this type of intervention , and have not planned to do so, for many of the students that they select for doctoral studies. This is a factor in the high failure and dropout rates in the doctoral qualifications. Institutions that are providing support and training of students at entry level suggest that they are improving the quality of the candidates who use pre-registration programmes, with the result that many of their doctoral students complete their studies in the expected time and improve the institutional throughput rates.

4.4.5 Distribution of resources

Review Panel Reports suggest that physical resources are generally strained for most institutions of higher learning in the provision of doctoral qualifications. This is in part due to the limited funding resources available for the support of doctoral programmes, as reflected in Section 5 below. As more institutions increased their student numbers in line with the national imperatives, funding of higher education appeared to have become a big challenge to provide adequately for their services in general. Many universities are particularly struggling to provide equality of provision for their doctoral students across all fields of study and disciplines. Others are coming up with innovative ways of providing equal access to laboratories and libraries using technological platforms, but still others have not moved beyond their limitations, thereby compromising the quality of their doctoral qualifications. Institutions have an obligation to ensure, before an application for doctoral study is accepted, that they have the necessary supervisory time and intellectual capacity as well as the equipment and facilities needed to address the research needs of the student. Innovative modalities include the use of partnerships locally, regionally and internationally to improve the quality of both resources and outcomes. Collaborations and internationalisation (discussed later, Sections 5.3 and 7.4.2), as complex as they are, if planned and implemented deliberately, are effective mechanisms used to manage the limitations in distribution and resource sharing, and include shared supervision.

4.4.6 Application of policies, procedures and practices across an institution

Almost all institutions, their faculties, schools, departments and disciplines participating in the review, showed evidence of the existence of sound governance procedures in place to support doctoral qualifications. Institutional policies, procedures and guidelines including practices were evident in most cases. For example, policies such as "*Policy on postgraduate studies and research ethics*" were evident in many institutions. However, common knowledge of procedures and practices, including updated versions of such, across faculties, schools, departments and disciplines, as well as common application thereof, remains a challenge. According to the Review Panel Reports, the manner in which policies, procedures and practices are managed and implemented in most institutions is neither clear nor even. In the cases where faculties are encouraged to develop their own rules, the institutions have overarching general rules and standing orders that are complemented by faculty rules. The challenge here is to ensure alignment of all the rules and to ensure that all students have access to the same set of general rules in order to minimise confusion. Where there are specific procedural variations relating to faculties, schools, departments or disciplines, they need to be defended on sound academic principles, must not offend the overarching principles established by the institution, and must be approved by the Senate or other appropriate high-level entity.

A particular area of concern is ethical awareness and professional conduct in doctoral research, for all fields of study. Observance of and compliance with oversight of ethical principles varies across institutions and faculties and, of great concern, in fields of human and animal research. Structures responsible for ensuring ethical and professional conduct also differ across institutions. The Review Panels and SERs noted and showed, respectively, that while ethical awareness and professional conduct in doctoral research (including relevant research ethics policies and practices in the different fields) were adequately described and implemented in many cases, this explanation was generally inadequate in some, and non-existent in other institutions. (This is discussed further in Section 7.1.5).

4.5 Purpose of the qualification

The Standard states that the purpose of the qualification is to "*…develop the highest level of holistic and systematic understanding of scholarship in and stewardship of a field of study through an original contribution that advances the frontiers of knowledge.*" In specific cases, the contribution may, in so doing, advance the frontiers of professional practice and/or creative activity. Such mastery and ability are evidenced by the specific knowledge and skills indicated in the Standard as 'Graduate Attributes'. These may be associated with an ability to engage, and lead thinking, with local, national, regional and international research and/or professional communities and, where relevant, to seek benefit arising out of the research for any community or social group that was the subject of, or participated in, the research (the social compact). Section 6 below discusses in detail the national review findings as they relate to graduate attributes.

To achieve this purpose, the physical and developmental contexts are important contributors. Institutions are expected (according to the Standard) to inculcate and nurture an understanding of and support for the fundamental purpose of the qualification in their planning and provision for doctoral qualifications.

Based on the institutional Review Reports, the following concluding observations are made:

a) Institutions have addressed this part of the Standard in a variety of ways. Some have equated the purpose of the qualification with their overarching institutional mission statements with the result that their interpretations of the qualification purpose are too broad and miss the uniqueness of the specific doctoral level of qualification. Others highlight critical foci of qualifications in general but also miss the opportunity to offer a unique rationale for the doctoral qualification. In some instances individual faculty mission statements relating to doctoral qualifications are not fully aligned with broad institutional mission statements. Other institutions simply regurgitated the purpose as stated in the Standard and missed the opportunity to relate it to the characteristics of the fields and disciplines of the qualification or suite of qualifications that they are offering. Much is assumed rather than presented in a clear articulation of the uniqueness and distinctiveness of a particular qualification. In many cases better alignment of purpose statements with institutional mission, vision and strategic plans is needed.

b) According to SERs, site visit interviews and Review Panel Reports, evidence based on supervisors' reports, student and graduate statements, extent of publications, NRF ratings, patents, and many other scholarship products, internationalisation and high-level collaborative projects with scholarly communities, was cited by institutions to show that the purpose of the qualification, characterized by intellectual rigour, innovation and depth associated with this highest qualification, was demonstrated in their doctoral provisioning. However, while this evidence was presented in detail in a number of cases, the extent to which this applied was uneven across institutions.

Section 5

FUNDING TO SUPPORT DOCTORAL STUDIES

The National Standards and Reviews Committee (NSRC) identified as a theme of the Review Panel reports, funding models for doctoral studies.

The SER template did not specifically include the requirement of information regarding provision of funding for doctoral studies. In fact, the only reference to funding in the SER template pertains to incentives for doctoral training. Nevertheless, the matter of funding for postgraduate studies is clearly an important issue and a matter for concern for most universities. We note that this section focuses primarily on universities in the public higher education system, where national subsidies and funding programmes are applicable, rather than the private institutions where different funding models are in place.

Funding issues encompass a number of different aspects, such as internal and external funding for bursaries, resourcing of recruitment of postgraduate students, support for international travel and mobility, maintenance and development, where required, of research facilities, and capacity building for emerging academics and supervisors.

There is wide variation in how different universities are able to fund activities related to doctoral studies, with even well-resourced and established institutions reporting constraints, as the overall availability of funds for research is reduced. Newer and less resourced universities have reported considerable challenges in providing for doctoral qualification programmes.

5.1 Funding for recruitment activities

Several universities noted that they support recruitment drives and programmes, as they seek to increase postgraduate enrolment numbers, in order to meet their agreed targets and to address the national need for higher numbers of doctoral graduates. In most cases, these activities are funded internally. The impact of funding constraints leads to challenges with recruitment activities and, therefore, negatively affects the capacity of institutions to grow their numbers of postgraduate students, including doctoral students.

5.2 Funding for doctoral bursaries

Provision of bursaries to doctoral students presents a challenge across the sector. The availability of financial support is critical to almost all doctoral students, and lack of funds results in considerable, and understandable, personal pressure. This in turn has a negative effect on students' ability to focus on their studies and complete their study programmes in good time. Several Review Panels commented on these negative effects, and on the resulting need for students to work (at least) part-time. The consequent knock-on effect is prolonged registration times, and added stresses, as well as slow completion rates. This is discussed further in Section 7.

Related to this, the recent change in the National Research Foundation (NRF) policy on postgraduate bursaries (to full cost funding and a smaller number of bursaries awarded than previously) has meant that much lower numbers of doctoral students are awarded NRF bursaries, which is of increasing concern.

Some institutions offer fees remission for selected doctoral students, generally based on merit criteria. While this is certainly helpful, it does not address the full cost of study. A few institutions offer fees remission to students who undertake *full-time* study (as opposed to part-time); however, this is open to misuse because students then tend to register as full-time students but still work part-time in other employment, and still experience delays in completion of the PhD study. This applies particularly to international students, who are generally not eligible for NRF and some other funding programmes.

Other institutions offer doctoral students some form of employment (such as tutoring, internships, technical assistance work, etc.). This, again, may detract from the students' capacity to focus and complete their doctoral studies in an acceptable time frame. However, careful management of part-time employment can provide important opportunities for development for doctoral students, especially in cases where part-time employment is in a field closely related to their research areas.

These issues reflect the socio-economic context of many of the doctoral students in South Africa, and highlight the need for a more comprehensive national programme for higher education generally, but particularly for doctoral bursary funding, since increasing the number of graduating doctoral students is a national priority.

Where institutions do offer doctoral bursaries

Some institutions have institutional (internally funded) or external research grant programmes for awarding bursaries to doctoral students (based on specific selection criteria) and some cited this as a valuable mechanism for attracting students to enrol for doctoral studies and for institutions to meet their enrolment targets. However, where this is the case, it is still the case that not all students are funded, and often the levels of funding are inadequate to fully support the costs of study.

Where institutions offer doctoral bursaries, some use their funding programme to align enrolment with their priority research themes and research centres, and where they have capacity for supervision, which is both sensible, in many cases, and an advantage in strategically building their research programmes. This is also important in cases where researchers are seeking to attract doctoral students, but have limited financial resources, and may be disadvantaged in comparison with researchers who are well-resourced (for example, holders of SARChI chairs, and similar positions).

It should also be noted that students in some institutions mentioned that administrative barriers and delays can lead to difficulties in accessing their bursary funds and result in delays and difficulties in their study programmes.

Funding for mobility

Some institutions are able to provide funds for travel and mobility bursaries, and support for doctoral students to attend national and international conferences. (These programmes have been somewhat curtailed by the COVID-19 pandemic but are likely to regain activity in due course). The capacity to support student mobility is largely in the well-resourced institutions, and many others reported that they do not have the budget to support student travel. Where it is possible, it is seen as a drawcard for students, and has a positive impact on the quality of the student experience, as well as giving the students valuable educational benefits in terms of exposure to international meetings, facilities and research programmes. It is noted that the move to online interactions has to some extent opened other opportunities for those who can develop or take advantage of networks.

Support for thesis completion

The costs of completion of the doctoral thesis was raised in several Panel Reports. Where students are required (or select) to use the services of editing and proofreading services, the costs are generally borne by the students. Some students reported that they were unprepared for this expense and that it led to delays in completion and submission of the thesis.

Similarly, where the publication of an article is required for the final assessment, the cost of publication (page charges) leads to some concern. Some universities reported that they do cover this expense, through research grants or support programmes (including, in some cases, the funding grant of the UCDP).

5.3 Institutional costs of doctoral qualifications

With increasing numbers of doctoral students, institutions have to provide more research facilities and infrastructure, as well as supervision (including salaries for external supervisors), study support, and skills training. As enrolment targets are increased, this adds pressure on the systems, and limited availability of financial resources creates constraints on institutional research facilities, and pressure on the national doctoral training system. The costs of providing adequate supervision and research support, including increased costs of library resources, technical support for research facilities, and additional administration of postgraduate programmes, may create greater demands on funding sources, such as institutional subsidy income, and may require realignment of allocation of such income. A related issue is also the sources and/or availability of financial resources for the support or payment of an increasing number of external co-supervisors in many institutions that do not have sufficient numbers of supervisors, but yet aspire to offer more doctoral qualifications and admit greater numbers of doctoral candidates.

A key part of the provision of adequate facilities for doctoral research is access to online and digital resources. This includes provision of bandwidth, data, and connectivity, preferably by wifi. Students need digital access to library and information resources, and any training materials and activities that are online. Institutions are required to provide these facilities to enable doctoral students to conduct their research, which in turn requires investment in establishing and maintaining the facilities. It also requires that universities ensure that students have adequate devices to use in their studies.

Some SERs reported that provision of digital access is challenging, and in some cases uneven across different campuses. This challenge has been exacerbated by the COVID-19 pandemic, consequent national lockdowns and the need for doctoral students to work almost entirely online, in some cases.

A few universities reported on the provision of funds to cover the operational research costs of doctoral students. In cases where the institutional infrastructure was not adequate, and specialized equipment may not be available, universities reported on systems whereby collaborative arrangements were made to enable students to have access to such equipment in other organisations. In a few universities, researchers and doctoral students can apply for funding to access such collaborative programmes, and where international or cotutelle agreements are in place, doctoral students are able to access support to use international facilities.

In many instances, operational research costs are also a challenge for students in disciplines such as the humanities and social sciences who, while generally not requiring expensive infrastructure and laboratory equipment, still require financial support for the running of a project. Such legitimate costs may include, for example, reimbursement for travel required for fieldwork, the processing of questionnaires, etc. Unless institutional support is available, the successful completion of such doctoral studies is inevitably delayed.

Doctoral supervision may be affected by the availability of funding, particularly where it is incentivised (in some, not all, institutions), and where external supervisors and examiners are remunerated for their work. Furthermore, as numbers of doctoral students are increased, the need for more qualified supervisors, in a wider range of fields of knowledge, leads to greater financial costs. One university reported that the incentivisation of supervision had previously become problematic, where supervisors may take on supervision of excessive numbers of students in order to receive the incentives, which were paid into personal accounts. This had been resolved by adjusting the system to pay the incentives into research accounts.

5.4 DHET funding support for doctoral studies and capacity building (the UCDP)

The University Capacity Development Programme (UCDP), funded by the DHET, provides for support for a number of activities related to doctoral training, including skills development and training, postgraduate retreats, mentoring programmes, and support for members of academic staff who are enrolled for doctoral studies.

This is an important initiative of the national department, providing funding dedicated to the development of new academic capacity in South Africa universities, and one which has been well-received. The UCDP is being used widely, at most universities, and with effective use. With sustained and possibly expanded resourcing, it has the potential to make a significant difference nationally.

Section 6

GRADUATE ATTRIBUTES

6.1 Graduate Attributes in a doctoral qualification in South Africa

The Standard asserts that the purpose and level of the qualification will have been achieved when all the graduate attributes are evident and that the attributes are assessed within the context of the purpose of the qualification.

The Standard identifies two categories of graduate attributes that must be achieved and evidenced in order for the doctoral qualification to be awarded. The first category – ***Knowledge Attributes*** – relates to the original contribution of a doctoral study, the extent to which this contribution is integrated within existing literature and academic debate, the extent to which the graduate is able to demonstrate expert and highly specialised knowledge within a specific area of research, the ability of the graduate to identify the interconnectedness of their work with other fields of study and practice, and the extent to which the graduate is able to demonstrate ethical awareness. In addition, doctoral students are expected to understand the epistemological process of giving meaning to empirical observation through hypothesis (where appropriate), from which the research questions may be derived.

The second category – ***Skills Attributes*** – relates to the selection and application of the most appropriate research approaches and methods to answer or solve the research problem, the extent to which the graduate is able to work independently, substantiate and defend their findings and conclusions, reflect on the various stages of the research process critically, and demonstrate critical and analytical thinking in a clear, coherent and logical manner. Much like the acquisition of the knowledge attributes, the development of the four skills attributes commences during the proposal development phase.

In addition to the two categories of attributes, the Standard further suggests that a clear description of the system for monitoring and assessing the progression towards attainment of the attributes should be provided. It is expected that as students move through their doctoral journey they will act, think and behave, at every stage of their study, in a way that shows progress as a researcher.

The CHE's *Framework for Qualification Standards*[5] further distinguishes between graduate attributes that are shared by the higher education sector as a whole, those that emanate from the specific mission and ethos of the awarding institution (as discussed in Section 4), and those that are shaped by the disciplinary context and knowledge in which they are conceptualised and taught.

The general interest demonstrated to incorporate the graduate attributes in the doctoral journey by the higher education sector in South Africa is welcomed. In particular, institutions should be applauded for this exercise in that they have been able to subject themselves to self-assessment on doctoral qualifications against the criteria in the Standard published long after the qualifications had been accredited and offered.

5 *CHE-2013, 19*

While the graduate attributes were embraced by the majority of institutions, the Review Reports from a few institutions reflected a critical response to these attributes, arguing that the attributes are not objective and neutral. These institutions argue that, on the contrary, attributes are applied within particular contexts of both specific disciplines and acquired by students as social, cultural and psychological beings.

6.2 General reflections on Graduate Attributes in the sector

The Review Panel Reports noted the following:

i) Some institutions are of the view that a successfully examined thesis is evidence that at least some of the graduate attributes have been met, that is, for example, broad and expert knowledge, original contribution to the field, research methodology, reflection, rigorous academic writing, and critical and analytical thinking. While other attributes cannot always be assessed directly in the thesis, some institutions claim that they can be deduced by 'reading between the lines'. For example, the SER of one institution stated that the graduate attributes and skills are not explicitly formulated during postgraduate studies but rather that their attainment is embedded in the nature of doctoral studies.

ii) Many supervisors at some institutions take the graduate attributes for granted as being part of the process of doctoral studies, despite the fact that this group plays a pivotal role to enhance the quality of a doctorate. Thus, supervisors in these particular cases are either unfamiliar with the concept, or not aware of their responsibility to build in the graduate attributes in their areas of supervision.

iii) While most institutions, in preparing their SERs, followed the recommended structure and format of attributes in the Standard, other institutions did not follow this structure (as this was not prescribed but only recommended). For institutions that did not follow the format, the graduate attributes were therefore not analysed in terms of the specified different headings. According to these institutions, attributes cannot be broken down into different categories but are rather formulated as an integrated whole for the entire doctoral qualification.

iv) Although the official differentiation in terms of institutional types is generally blurred at doctoral level, the differences in conceptualising graduate attributes in a doctoral qualification by the different institutional types were noticeable in the Panel Review Reports and SERs. For example, the attainment of disciplinary knowledge attributes, with specific intention of deepening the candidates' knowledge of the area of specialisation (to enable them to make an original contribution to their respective fields), was more pronounced in some institutions, especially traditional universities, than in others. This could be attributed to the fact that traditional universities tend to focus more on the production of disciplinary knowledge compared to UoTs that focus more on applied specialist disciplines that are more associated with (and draw from) the world of practice.

v) The majority of institutions also intentionally seek to build into their doctoral qualification values like moral integrity, responsibility, cultural and cognitive justice accountability, and human compassion.

vi) Evidence of claims on how students are expected to acquire graduate attributes in their doctoral journey varied. These claims were articulated by institutions in many cases and were triangulated with students' own experiences in a few cases where both students and alumni explained how they acquired or attained the attributes in general.

vii) The SERs of many institutions focused on a discussion of graduate attributes as a summative and demonstrable outcome, with only a few institutions discussing the processes of how the attributes were acquired.

viii) Since the process of becoming and being (in terms of a graduate identity) depends on a student's previous social and educational experiences, some students as knowers will attain the attributes more quickly than others.

6.3 Knowledge attributes

The Standard requires that graduates should have acquired *well-informed relevant knowledge* in the selected field or discipline upon completion of their doctoral studies, through an original contribution achieved through independent study. Graduates should be able to integrate new with existing knowledge, thereby advancing the frontiers of knowledge. In addition, graduates are expected to be well-informed about the literature in a chosen field, and able to make a contribution to the relevant evolving debates in the field.

6.3.1 Broad, well-informed and current knowledge of fields or disciplines

Different institutional interpretations of what constituted *well-informed relevant knowledge* in the selected field or discipline in doctoral studies were observed. In particular, several strategies and mechanisms developed by institutions to build these attributes into their doctoral qualifications were identified by the Review Panels. These include: hosting of workshops, seminars and colloquia, as well as communities of practice (CoPs). In particular, CoPs are perceived as platforms that encourage doctoral students to go beyond the narrow focus of a specific discipline or field of study. It was also noted that the time allowed for completion of the degree is critical for infusing well-informed and current knowledge fields or disciplines in students.

Other approaches mentioned and reported by Review Panels that are used by various institutions to ensure the attainment of this attribute include student presentations in the cognate department/faculty of registration, encouragement of students to join 'journal clubs', the preparation of 'concept notes', and familiarising students with the current relevant literature.

In addition, the following proposed interventions to facilitate the attainment of the broad, well-informed knowledge attribute, and work towards achieving it, were noted:

- institutional policies and structures guiding this attribute;
- ensuring that attention is given to monitoring and assessing the attainment of this attribute (starting at the proposal-writing stage of the study); and
- ensuring that the evaluation criteria include the assessment of this attribute.

However, the Review Panels also observed that while students confirmed that the workshops and seminars were useful in acquiring *well-informed relevant knowledge* in the selected field or discipline, they were in most cases voluntary and applied inconsistently - even within the same institution.

A concern was notes that the assessment criteria are often optional and left to the discretion of faculties. It was not explicit in some cases how this attribute is assessed consistently as part of the proposal and presentation evaluation criteria for all doctoral qualifications because of the decentralised proposal approval, examination and assessment processes.

Recommendation

All institutions should have programmes in place whereby regular workshops, colloquia and seminars, and platforms like CoPs, are organised to offer doctoral students opportunities to present their work and exchange ideas at regular intervals (where appropriate) during their doctoral journey.

6.3.2 Expert, specialised, and in-depth current knowledge of specific area of research

The Standard recommends that a graduate should demonstrate *expert, specialised, and in-depth current knowledge of a specific area of research*, which will be evident in the thesis or equivalent. The Review Panels observed that the majority of institutions have formulated this graduate attribute and provide a range of strategies, structures and mechanisms to foster this attribute. However, a minority of institutions have not done so. Strategies that are in place and are used include: attendance of short-learning programmes and training courses; conferences; workshops and seminars presented and/or facilitated by experts.

Further, institutions in some cases rely on "expert supervisors"[6] and co-supervisors to assist students to develop an even more robust and wider theoretical grounding in specific niche areas. Other interventions include participation of doctoral students in national and international initiatives like those facilitated by the National Institute for the Humanities and Social Sciences (NIHSS) to foster in-depth knowledge and continuous assessment of this attribute at various stages of students' doctoral journey. Many institutions stated that oral presentations (during both proposal-writing stage and thesis-writing stage) are considered to be useful strategies to instil, consolidate and show evidence of this attribute.

Review Panels reported (from site visits) that, in many cases, students and alumni corroborated institutional claims in respect of the acquiring of expert, specialised, and in-depth current knowledge. However, in other instances the experiences of the students and alumni seem not to have been solicited or documented. It could be argued that this is because either there was not much awareness of this attribute, or the attribute was not considered relevant for a doctoral candidate.

6.3.3 Insight into interconnectedness of one's topic of research with other cognate fields

The Standard requires that graduates should demonstrate awareness of how the specific area of research relates, or is relatable, to other fields of study and practice which will be evident in the doctoral work.

An analysis of Review Panel Reports and SERs revealed institutional variations in terms of developed policies, adopted practices and plans to promote insight into this attribute. While some institutions indicated how this attribute is instilled in doctoral students, this was not discussed at other institutions.

It was documented that, despite some reservation about inter-, multi- or transdisciplinary topics supported to foster interconnectedness of one's topic of research where deep specialisation is involved, inter-, multi- or transdisciplinary routes were generally embraced by both private and public institutions. The reservation emanated from fields where the production of deep disciplinary knowledge is emphasised. The perceived fear is therefore that inter-, multi- or transdisciplinary routes tend to dilute the acquisition of required disciplinary knowledge of specific fields.

The Review Panels recorded examples of how some institutions nurture interdisciplinary and transdisciplinary approaches in doctoral topics across all fields of study.

The Review Panels also observed that a number of institutions reported that the attribute of interdisciplinary insights is enhanced through one or more of the following mechanisms: having more than one supervisor (with one being from a related field); attendance of seminars presented by senior academics from a variety of disciplines and fields; carrying out research activities in 'facilities that may not seem related to their research topic'; and practical application of the research findings in service delivery, policy formulation or new products.

Interdisciplinary and transdisciplinary studies were supported especially by private higher education institutions, on the grounds that such studies promote knowledge production appropriate in the workplace, because, according to one SER, "industry requires leaders with agility in dealing with a range of demanding situations, which cannot be engendered by focusing on a single discipline." Such approaches would also enable students to develop as successful professionals in a collaborative, interdisciplinary environment in preparation for highly competitive positions in industry, government, academia, and non-profit organizations.

While the majority of institutions claimed that interdisciplinary and transdisciplinary approaches feature in certain doctoral qualifications, ways in which these approaches are applied in doctoral qualifications are scant and lack detail in some cases. It is expected that such approaches would be more effective if institutional guidelines are developed, their implementation carefully monitored, and consistently and appropriately applied across institutions. The Writing Team strongly endorses the significance of inter-, multi- or transdisciplinary research centres, created at some institutions to provide space for critical discussion about the interconnectedness of topics with other cognate fields that need to be nurtured by all faculties across the institution.

6 *A number of institutions use the term/concept "expert supervisor" for non-university based persons who are based in industry and/or business and who engage as supervisors and/or co-supervisors for a doctoral candidate.*

Despite implicit misgivings from some fields about the perceived dilution of disciplinary knowledge, the Writing Team recognises that interdisciplinary and transdisciplinary approaches cited in the Standard are intended to enable doctoral graduates to transcend their discipline without necessarily diluting specialisation in them. Further, while the Standard recognises interdisciplinary and transdisciplinary approaches, it does not promote or contemplate them as being superior to single-discipline approaches.

Recommendation

Interconnectedness of the different fields of research and practice, as well as interconnectedness within fields, is a good practice that is to be encouraged.

6.3.4 Original contribution to field of study

Graduates are required to show evidence of original and innovative thinking in research and, where applicable, creative practice and/or performance, which makes a special and novel contribution to the field of study.

It was observed that, although originality is an acknowledged feature of a doctorate, the issue of what constitutes originality, and how it is fostered, remains contested. Thus, diverse interpretations and frameworks emerged across different institutions, faculties, and disciplines on what constitutes originality in contributions to knowledge in a doctoral qualification, in both local and global contexts. The diversity of views is understandable, given the variety of knowledge frontiers that characterise different disciplines. Given contestations about what constitutes originality, a more broad and accommodating conceptualisation observed by Review Panels from the various SERs is that, originality as a graduate attribute would have been achieved if the study does one or more of the following:

- it contributes to the body of knowledge;
- it contributes at the level of methodology, at the level of theory and insights into the application of theory; and
- it contributes at the level of practice such as new techniques or interventions.

Following the above conceptualisation, originality depends on the discipline and specialisation and, to some extent, institutional context. It follows that originality may take various forms and a combination of forms. These may include any of the following: evidence-based new inventions; a new or novel way of thinking (e.g., identifying a gap in existing knowledge and then proposing ways to fill the gap; or actually filling the gap through research); and contribution to methodological, theoretical and practical knowledge, in a geographical context (e.g., generating knowledge from Africa), or a historical context.

The majority of institutions are of the view that the graduate attribute of *originality* is inculcated from the preparation of the research proposal through to final assessment of the thesis. Strategies recognised by Review Panels and SERs to instil originality in doctoral studies include, amongst others, requiring students to demonstrate and defend the anticipated original contribution to the field of study during the proposal preparation; participating in a 'mock' defence of the thesis; colloquium defence to panels comprising experienced facilitators, researchers, and supervisors; and allowing students to explore new ideas on already tested and known theories and models, supporting them through the process of deconstructing and reconstructing knowledge.

Some institutions claimed that the originality attribute is demonstrated in journal clubs by helping candidates to identify gaps in the literature, thereby fostering a potential knowledge contribution; or through a pre-proposal 'concept' note; or through publication before examination of the thesis.

Recommendation

Institutions should incorporate in their doctoral training, of both supervisors and students, clear conceptualisation of the originality attribute as located within institutional context, structures, and the nature of disciplinary specialisations.

6.3.5 Ethical awareness in research and professional conduct

This attribute should be understood against the backdrop of global and national trends and imperatives that highlight ethical awareness in research as the bedrock of doctoral research. The doctoral graduate should demonstrate an awareness of, and compliance with, the principles of ethics in research and, where relevant, professional protocols that will be evident from the in-depth discussion in the thesis and research paper(s), especially where research with human and animal subjects is undertaken. Ethical awareness in research and professional conduct comprises two aspects of research ethics as an attribute, as it relates to research subjects and the communities that are likely to be affected by the research, and research integrity as it relates to the approach of the student to matters like plagiarism, data manipulation and acknowledgement in publishing.

The Review Panels found institutional variations relating to ethical awareness and professional conduct attributes, and research integrity.

While the majority of institutions discussed ways in which ethical awareness and professional conduct attributes are instilled in doctoral students, these attributes were either mentioned only in passing or not discussed at all by some institutions. In some cases, institutions mentioned that students were expected to acknowledge and respect constitutional principles and values such as equality, diversity, inclusion and social justice, and were committed to improving local, national and global sustainability. Some institutions referred to integrity, interpersonal flexibility and valuing difference as other areas of ethical awareness.

The Review Panels and SERs further confirmed that deliberate efforts are made by some institutions, through workshops and seminars, to improve ethical awareness amongst doctoral students.

Where ethical awareness and professional conduct attributes were acknowledged, the way in which students would demonstrate attainment of these attributes was generally not described in many cases. At a few institutions, ethics and professional conduct are ensured by insisting that all formal research groups are accredited by the relevant institutional committee. This requirement is believed to increase the chances of doctoral success in building the attribute of ethical awareness in research and professional conduct. Two institutions highlighted that the attainment of attributes in doctoral candidates will be evident in the in-depth discussion in the thesis. The majority of institutions indicated that graduates would especially be able to demonstrate ethical awareness where research with human subjects was undertaken and this was confirmed by students during virtual site visits. The concern raised in some of the Review Panel Reports is that emphasis seemed to be on promoting ethical awareness in many cases and inadequate description of acquiring professional conduct.

The Review Panels lamented that in general, the monitoring of ethical awareness and professional conduct is not sufficiently explained at some institutions and not discussed at all at other institutions. The Review Panels did find during virtual site visits that students and alumni at some institutions could explain how ethical awareness and professional conduct were instilled in their doctoral studies.

Furthermore, the Review Panels expressed disappointment that the majority of institutions that the assessment template provided to the external examiner of the doctoral candidate's work/thesis does not require the examiner to reflect on ethical considerations in many institutions. This requirement is included in the template in only a few cases.

Two observations from the Writing Team are the following: first, the distinction between ethical awareness and professional assistance is not clear in many cases. Second, research integrity in particular is not clearly explained in the majority of cases.

Recommendation

Acquiring both research ethics and research integrity, as well as fostering the attainment of ethical awareness and professional conduct attributes, is a good practice highlighted by some institutions.

6.4 Skills Attributes

6.4.1 Evaluation, selection and application of appropriate research approaches

The Standard requires that graduates must demonstrate knowledge of, and the ability to create and introduce where appropriate, and to evaluate, select and apply relevant research designs, approaches, methodologies, instruments, and procedures, appropriate for the doctoral work undertaken.

Different mechanisms and tools are used by institutions to formulate the *evaluation, selection and application of appropriate research approaches* in their doctoral qualifications. Some institutions argue that this attribute is developed in training that focuses mainly on general qualitative, quantitative, and mixed methods research, apart from subject-specific methodologies in individual disciplines and faculties. Regular workshops and seminars were identified by many institutions as platforms for training and mentoring students and ensuring that they graduate with a good grasp of research methodology. Graduates would demonstrate knowledge of and the ability to create and introduce, where appropriate, and to evaluate, select and apply relevant research designs, approaches, methodologies, instruments and procedures, appropriate for doctoral work undertaken.

There is general agreement that supervisors play a critical role in the development of the evaluation and selection attribute, particularly at the proposal stage of the doctoral journey. Also, according to some SERs, the differences in faculties and disciplines are taken into account when measuring the attainment of the attribute.

While some institutions went to great lengths to describe how they see the attainment of the attribute, the description of this attribute was in some cases either lacking or articulated in more general terms with a lack of specificities. There are also inconsistencies across the institutions and faculties, and inadequate description of mechanisms and activities employed by faculties, schools and departments to facilitate the attainment of this particular attribute. Similarly, claims that supervisors ensure achievement of the attribute because of their affiliation with research entities involving their doctoral students in their research projects tended to be more aspirational than real. Further, the description of how faculties, departments and supervisors support students to attain the attribute and assessment of the impact of such support, was lacking in some cases.

According to Review Panel Reports, specific approaches employed by the majority of institutions to instil *evaluation, selection and application of appropriate research approaches* as an attribute comprised:

- workshops and introduction to tools to assist doctoral candidates in finding appropriate methodologies and techniques to achieve their research objectives;
- workshops and seminars on research design and research courses in methodology offered by the Postgraduate Schools. These are seen to be a means of ensuring that students can select and apply appropriate research approaches; and
- the use of research methods courses focusing on general qualitative, quantitative, and mixed methods research, apart from subject-specific methodologies in individual disciplines and faculties.

The skills are seemingly monitored during the proposal presentation stage by the proposal feedback evaluation panel; through the ethics clearance committee (if ethics approval is required); through critical discussions with the supervisor(s) - record keeping by supervisor; and during formal and informal research presentations.

6.4.2 Reflection and autonomy

The Standard requires that graduates must demonstrate their ability to conceptualise and reflect critically, work independently, and arrive at defensible conclusions and solutions, based on appropriately-substantiated and defensible premises and analysis. The Review Panels reported different approaches with regard to how institutions claim to have built reflection and autonomy into doctoral studies. While detailed descriptions were provided to foster reflection and autonomy, the descriptions were somewhat lacking.

Several approaches to develop reflection and autonomy in doctoral students, as advocated by institutions, are the following: allowing doctoral students to choose theses titles by themselves rather than having the titles prescribed by faculties or supervisors, and students drawing their research pathways; sole-authored and co-authored publications (where appropriate, and depending on the disciplinary practice); regular interactions organised with the supervisors, and feedback on work presented at academic fora; identifying strategic projects from which research areas are drawn. In addition, the cultivation of reflection was developed by soliciting feedback from the student's research proposal, oral presentations, and journal reviewers, among others. In particular, it is argued that the role of supervisors taking the lead in fostering the reflection attribute in their students is a standard practice expected from all institutions.

The following concerns were raised by Review Panels regarding the strategies adopted to foster reflection and autonomy:

a) The difficulty of acquiring this attribute for part-time students pursuing their doctorate through distance learning who in many cases are unable to attend the face-to-face engagements offered by supervisors or the workshops/seminars held in the institutions;

b) Well-intentioned, students' original research objectives and methods tend to be straitjacketed by the demands of the funding of high-level research that is sufficiently specialised, but not necessarily beneficial to the original research study of students;

c) Research project proposals may be influenced by institutions' strategic initiatives (often linked to departmental strategic plans) which may have a consequential impact on doctoral originality and independence;

d) Despite the benefits of developing other attributes (such as the ability to work in a team, inculcating interdisciplinary and transdisciplinary interaction with students from cognate disciplines, through a cohort model where it is used), doctoral workshops presented by supervisors from diverse disciplines have the danger of derailing students from their original research, as students may be influenced by research topics and areas presented, if they are not properly planned and guided by supervisors; and

e) While the Standard requires attainment of both reflection and autonomy, these two elements of the attribute were discussed as one in the majority of cases, with attention given to autonomy almost exclusively.

6.4.3 Communication skills, including relevant information and digital literacy skills

The Standard requires that graduates 'demonstrate an advanced level of communicative competence, through capacity for extended, sustained and rigorous academic writing, including relevant digital literacy skills appropriate for doctoral research, and the ability to relate individual research with reference to, and critical analysis of, associated research produced by scholars in the relevant intellectual and knowledge domain. Furthermore, a graduate should be able, as appropriate to the field of research, to communicate research findings effectively to expert and non-expert audiences alike, to defend them in the context of intellectual contestation, and to disseminate them in appropriate forms.'

The Review Panel Reports of all institutions pointed out that although the challenge of academic writing in general has been raised in SERs, a few institutions specifically referred to the fact that some students, even first language speakers of English, experience difficulties. Thus, there is a greater convergence about the significance of *communication skills, relevant information and digital literacy skills attributes for doctoral students*. Generally however, the account of how each aspect of the attribute is developed varied from a detailed discussion of approaches employed in the majority of cases, to inadequate description in a minority in some cases. As with other graduate attributes, it was assumed that this attribute is acquired without deliberate intervention by institutions and supervisors.

Strategies employed to develop the communication and digital literacy skills attribute in the majority of cases are: workshops, seminars, colloquia and conference presentations. Students are expected to demonstrate specialist knowledge of their fields against a broader field understanding, critical and reflective capacities, research methodologies and communication skills in their presentations. Increasingly, the scientific community and indeed doctoral students are also expected to demonstrate their ability to communicate scientific knowledge to a broader audience, as part of public understanding and appreciation of fields of practice through various means and media.

The majority of institutions indicated that communication skills, relevant information and digital literacy skills are nurtured at the beginning stages of a doctoral journey. It was also noted that examiners are expected to provide feedback on the linguistic aptitude of the doctoral thesis, which is an indicator of the student's written communication skills in the majority of cases.

The Review Panels and SERs noted that assessment of the candidate's communication skills in the majority institutions is continuously done during the proposal defence; when delivering formal and informal research presentations; during critical discussion with supervisors; in the doctoral examination, and during oral defence. Oral presentation of the final thesis was reported to be compulsory as a tool to assess the attainment of the communication skills attribute in few cases.

Recommendation

The development of communication skills as a graduate attribute, with reference to academic writing and, increasingly, public communication in the specific discipline of study, is a good practice and should be appropriately incorporated in doctoral guidelines.

6.4.4 Critical and analytical thinking for problem-solving

The Standard requires graduates to demonstrate 'the ability to conduct research-related critical and analytical thinking, which shows an intellectual competence for problem-solving in diverse contexts, both familiar and unfamiliar.'

Problem-solving skills are critical throughout the doctoral journey. There were institutions variations in the ways in which these skills are nurtured in doctoral qualifications. Mechanisms and structures to realise the attainment of the attribute are developed in some cases, but generally lacking in others.

Specific strategies identified by some institutions include:

- The use of Centres for Post-graduate Studies (or similar name) that specifically focus on doctoral students; writing support interventions (sometimes offered by Writing Centres); workshops and seminars; annual postgraduate conferences; and mentorship support programmes for off-campus students, to instil critical and analytical skills; and
- Provision of numerous opportunities for students to present their work at various fora and through interaction with various stakeholders.

The Review Panels identified two assumptions. First, the development of problem-solving attributes inevitably occurs as students engage with different aspects of their doctorate. Second, the analysis of research data by itself is an important activity for developing critical thinking, analytical and problem-solving skills.

Some misgivings about strategies adopted by institutions to develop the attribute are as follows:

i) Critical and analytical thinking and problem-solving skills cannot be directly assessed if students do not engage in specific activities;

ii) There was difficulty in verifying the assumption that students would attain critical and analytical thinking by engaging with specific aspects of the doctoral qualification;

iii) There were challenges in verifying that graduates would be able to demonstrate the ability to conduct research-related critical and analytical thinking; and

iv) Off-campus students often miss out on many interventions such as writing support interventions, workshops and seminars, annual postgraduate conferences, and mentorship support planned for residential students.

Recommendation

The creation of a Writing Centre that will provide support for doctoral candidates is a good practice for nurturing critical and analytical skills attributes.

6.5 Summary of Graduate Attributes in doctoral studies

Review Panel Reports include the following observations:

i) Policy requiring the formulation of graduate attributes for doctoral studies is not in place in some cases, and is applied inconsistently and haphazardly where it exists in some others;

ii) There seems to be a lack of knowledge of the attributes on the part of students and supervisors (who, in some cases, were not aware that they are expected to support students to attain the attributes in a doctoral study);

iii) There is a general lack of, or inadequate, monitoring of implementation and assessment of graduate attributes. Only in a minority of cases are these processes explicit;

iv) Summative assessment of attributes is a general norm, though isolated cases of formative assessment are noted; and

v) There is generally a lack of description of assessment criteria and assessment tasks that students need to perform in order to demonstrate that they are attaining (or have attained) the attributes.

From a study of the Reports, the Writing Team offers the following as additional good practices relating to graduate attributes:

- The recognition that graduate attributes involve both knowing and knowers. Thus, given the diversity of students with regards to particular contexts and experiences, some candidates will need more time to develop the attributes than others;
- The opportunity for students to reflect on their "becoming" and "being", as part of the process for realising the graduate attributes;
- Identification of specific activities which students should undertake to demonstrate their attainment of attributes;
- Student self-assessment on whether they are attaining or have attained graduate attributes;
- Implementation of formative assessment of attributes during the journey and summative assessment at the end of the doctoral journey; and
- Identification and description of assessment criteria and assessment tasks.

Section 7

SUPERVISION AND ASSESSMENT

In the previous sections the Report has addressed the general context within which South African HEIs have historically operated in the provision of the doctoral qualification. The Report has also looked at explanations by the 28 institutions of how doctoral qualifications address the values and ethos expressed in the Qualification Standard, including the graduate attributes required of the doctoral qualification. The previous sections further presented an analysis of the description and evaluation of the alignment between the doctoral qualifications offered by institutions, and institutional contexts, missions, goals and strategic plans. Although the SER did not require HEIs to describe the funding issues, this Report has, in view of the critical nature of funding, provided some analysis in a section above as it relates to public HEIs.

This section focuses on the findings of the review as they relate to the supervision and assessment, and all the associated issues in producing doctoral graduates. It brings together the elements of the whole "value-chain" of recruiting, nurturing, and graduating doctoral students. Where appropriate, concerns, raised by the Review Panels and the Writing Team, are noted for emphasis, and similarly recommendations for improvement are also noted.

7.1 Admission and Registration conditions

The conditions for admission and registration of doctoral students cover requirements for previous qualifications, recognition of prior learning, processes for selection and acceptance into doctoral qualifications, pre-registration requirements, availability and allocation of supervisors, and in many cases, completion of preparatory training courses. The Standard requires that institutions have policies and processes in place for recruitment, selection and enrolment of students in the Doctoral qualification, including, where applicable, procedures for the recognition of prior learning that provides evidence of current research competence. Information provided in the SERs, and the Review Panel Reports, demonstrate that there is very wide variation between different institutions, in the processes and conditions for admission and registration of doctoral students. While some variation is understandable, given the widely differing institutional contexts (as discussed in Section 4), the extent of the variation across the 28 different institutions offering the doctoral qualification is of concern.

Concern

A common concern, reported by several Review Panels, is a lack of clarity, in institutional policies, on the roles and responsibilities related to admission and registration of doctoral students. In some cases, this is related to whether processes are managed centrally or at faculty or departmental level. Some institutions (in particular, some of those more recently established) reported that they are currently engaged in completing, updating or revising their policies, and this was noted by Review Panels.

Recommendation

All institutions should ensure that they have in place a set of clear, consistent policies and processes for management of admission and registration of doctoral students, covering all of the institution's requirements, including previous qualifications, recognition of prior learning, processes for selection and acceptance into doctoral qualifications, pre-registration requirements, availability and allocation of supervisors, and completion of preparatory training courses (as outlined and detailed below).

7.1.1 Recruitment

Practices for recruitment of doctoral students differ between institutions, depending on their objectives. Most reported that their objectives were related to their enrolment targets (as agreed with the DHET) and their institutional strategic priorities. In many cases, recruitment is targeted to align with institutional niche focus areas and centres where particular research capacity is being developed, and where the institution is building on its areas of expertise.

Recruitment is seen generally as somewhat complex, requiring special capacity and resources. Support for centralised recruitment programmes is provided in some cases, especially where the university is seeking to increase its doctoral enrolment numbers. In other cases, recruitment is conducted mostly by faculties, departments or individuals, based on available supervisory capacity and facilities.

Recommendations

- It is important that recruitment is aligned with areas where there is supervisory capacity and that institutions consider the availability of supervisors before recruiting doctoral students. It is also clear that strong coordination between student advisory and administration sections, and research groups or supervisors, would enhance the outcomes of recruitment activities for departments and students.
- An area for improvement in many cases is the communication to the prospective student of information and opportunities for doctoral programmes or projects. It was reported that students find it challenging to identify opportunities, or projects, and information is not readily available. This may be particularly challenging for prospective students who are from outside the institution or department, and who are not familiar with the projects and project leaders.
- Furthermore, it is important for students to be able to access information on how to apply for admission, and this is not clear in many cases.

7.1.2 Processes for selection

In some cases, the process of selection is centralised and dealt with through the Senate, although this may also be considered by committees and central administration, based on institutional policies and regulations. In these cases, policies and regulations are generally accessible in the General Regulations (or equivalent) of the respective institutions. A possible disadvantage of this is that there may be a lack of awareness of constraints such as supervisor overload or lack of supervisory expertise.

In other HEIs, selection and admission are approved at faculty level, with decisions made by Deans, often on the recommendation of Heads of Department. In these cases, the rules are documented in faculty handbooks (or equivalent), and there is considerable variability between faculties as well as institutions. In a few cases, the processes for selection and admission are conducted at departmental level, mostly adhering to faculty or institutional regulations. This would seem most appropriate as long as there is transparency and alignment with institutional objectives and principles.

Concerns

- Of concern are a small number of examples where there is little apparent oversight at institutional level, and a concomitant lack of clarity and transparency in selection of doctoral students and allocation of supervisors.
- Impaired or inadequate selection processes can lead to admission of unsuitable or underprepared students, many of whom may, in due course, drop out of the study programmes. Improved selection processes would lead to lower dropout rates.
- A lack of consistency and transparency between the practices of faculties, and/or departments, in the same university was raised as a concern by several Review Panels, and revision and alignment for greater consistency and transparency, across institutions, was called for.

Recommendations

- The process of selection of doctoral students is a critical first step in the development of a doctoral student, and it is important that institutional processes ensure that adequate supervisory capacity and expertise is available, so that students are given optimal opportunities for development and success.
- Institutions should ensure that their selection processes are consistent and transparent.

i) Consultation

Consultation between the prospective student and supervisor and/or head of department is not documented in many SERs, but this is an important aspect of successful selection. The suitability and preparedness of the student can be assessed, and the suitability of a research project can be determined, at least to some extent, through interviews. Very few institutions reported that this was their common, or formal, practice. It is also important that where the project plan is not well-conceptualized, plans are discussed regarding its further development.

Recommendations

- To ensure the alignment of expertise, capacity and goals of student and supervisor, consultation between the supervisor and student should be required as an early step in the process of acceptance of a doctoral student by a supervisor.
- This should include discussion of the intended project, and its further development, in the context of the discipline and available resources.

ii) Prior qualification requirements

With regard to prior qualifications, policies and requirements are somewhat variable, but the majority of institutions stated that they require a Master's degree (in accordance with the HEQSF), in many cases with a specified level of achievement (for example, 65% for the Master's degree). This is intended to be a reliable means for ensuring the quality of students admitted, in terms of their preparedness and research background. However, it is noted that expectations vary between disciplinary areas, and in some fields, and especially with respect to coursework Master's programmes, the research background may be quite focussed and therefore not sufficiently broad. This would need to be taken into consideration in the development of the doctoral student.

iii) Systems and processes for admission

Concerns were raised by some Review Panels about the systems for admission to doctoral studies being complicated, tedious and non-transparent. While this is not common for all universities, it is of concern that it was often students and alumni who mentioned this, which indicates that their first experience with the institution was negative.

Recommendation

It is a recommendation of several Review Panels that user-friendly online systems for managing and monitoring applications and admissions processes should be established and used to streamline the processes.

iv) Recognition of prior learning (RPL)

Policies for recognition of prior learning (RPL) are required by the Doctoral Standard, with procedures for assessing evidence of current research competence. In most institutions, there is a policy in place, whereby the RPL approval for admission is a Senate or Senate Committee process. This is important, since RPL is equivalent to assignment of the academic status required for admission to doctoral study (viz., Master's status). It is noted that RPL application is for admission, and not for advanced credit. In addition, almost every case of RPL is individual, and attention needs to be paid to individual research experience, background and level of preparedness for doctoral study.

Recommendation

In several cases, although the policy for RPL is in place, Review Panels noted that it is unclear how the policy was being applied, and recommendations were made that the process should be clarified, and dealt with at the appropriate (institutional, or Senate) level.

v) Upgrading of registration from Master's to doctoral level

A number of institutions reported that they have processes that allow students (individually) to upgrade from Master's registration to Doctoral registration, based on the quality and/or originality of the Masters project. However, in some cases there is a lack of clarity on the institutional policies, procedures and practices that govern such upgrades. In other cases, the process is set out in the General Rules or faculty regulations, and is regarded as being similar to RPL (see sub-section above). The upgrade is approved at Senate committee level, where it is treated in the same way as RPL.

Recommendation

The rules and processes for allowing students to upgrade a Master's registration to doctoral registration should be clearly set out in the institutional rules. This should include specifying the committee (recommended to be at Senate level) that is responsible for approving the upgrade.

7.1.3 Pre-registration and requirements for registration

The conditions for registration for doctoral studies address the preparedness of the student, in terms of research background and experience, and skills required to conduct an independent study. In some contexts, the expectation is that the prospective student must demonstrate these capabilities before they are accepted and allowed to register, and the preparation of some form of evidence is often required.

i) Registration related to research proposal

All institutions reported that a full and comprehensive research proposal must be completed by the doctoral candidate, prior to the initiation of the actual doctoral research programme. Most require that the proposal be approved, either by faculty or departmental committees.

The date of approval is an important issue, related to intellectual property, in that the point at which a student completes their proposal and it is accepted by the university, is the stage at which the university takes 'ownership' of the project, and thereafter, the student may not take the project to another institution without permission. Subsequent to the acceptance, the home university owns and protects the intellectual property in the project.

Concern

Of concern is the additional requirement, common in many institutions, that the proposal must be approved *before* registration is allowed. This raises the question of the status of prospective doctoral students prior to the approval of the proposal, and, in the SERs of the institutions where this is the case, it is not clear how they manage students who are working at the university, but are not registered.

There are important questions to be considered regarding the obligation of the supervisor and the institution, and of the student, when there is no formal relationship between student and institution, including the following:

- There may be no obligation for the institution with respect to providing guidance and academic support during the preparation of the proposal, and this raises the question of whether the supervisor will guide the student or if the student is expected to work unguided in writing the proposal. This will inevitably have implications for the quality of a proposal, if the student may be required to work unsupervised until the proposal is completed.
- In the extreme case, an unregistered student may not have adequate access to information systems and facilities such as libraries, which would limit their ability to complete the proposal. Further, the unregistered student may not be obliged to comply with institutional rules and regulations, including health and safety, and similarly, there may be no obligation on the part of the institution regarding the "student's" well-being, health and safety.

Provisional, or pre-registration, prior to completion of the research proposal, is used as a mechanism in some universities, during the preparation of the research proposal. In the case of a small number of institutions, SERs reported that doctoral students are permitted to pre-register, with specific pre-registration status, prior to completion and approval of a research proposal. In one case, the doctoral student is registered with 'pre-proposal status' and allowed to register formally as a doctoral candidate after the proposal has been completed and approved.

In a few cases, full registration is allowed on the basis of a research concept note (or similar), after which a comprehensive research proposal is completed under the guidance of a supervisor. This should be regarded as good practice in cases where registration takes place prior to finalisation of the proposal.

An institutional consideration, for provisionally or pre-registered doctoral students, is their status with respect to DHET input funding (which is based on the recorded date of first registration), and implications for when the university claims, and receives, this subsidy.

Recommendation

It is unclear, in many cases, what the 'official' status is, of a pre- or provisionally registered doctoral student, and it is strongly recommended that institutions should clarify the status of students who are required to complete a research proposal, and establish some form of formal pre-registration status as necessary. Further, this requirement should be made consistent across any institution.

ii) Feedback and approval of the research proposal

Formal approval of the research proposal is a requirement in most institutions, although the processes and levels of approval vary widely. In most cases, this is a department or faculty committee process. In a few cases, the institutional Higher Degrees Committee (or equivalent) approves the proposals.

Several Review Panels reported that students experienced delays in receiving feedback on their research proposals or concept notes, which in turn leads to delays in formal registration, initiation of research projects, and access to funds and facilities. These delays, especially if they are prolonged, have a consequential impact on times for completion and graduation. These delays may be due to the supervisor being overloaded (possibly due to institutional policies of increasing numbers of doctoral students), in which case this underlying challenge should be addressed (see Section 7.2.1).

The complexity of the proposal approval process was mentioned by some students, one of whom indicated that it requires them to 'jump through multiple hoops, whereby they have to satisfy a number of reviewers, rather than producing a proposal which will act as a sound roadmap for the studies'. This may be due to the review committees comprising reviewers with widely diverse views and levels of experience, and simplification of the process may be a recommendation.

iii) Student preparedness

Several reports discussed the level of preparedness of doctoral students, and in some cases, the concern was raised that students were often under-prepared for doctoral studies. While the ideal level of preparedness of a doctoral student is not consistently defined, it is clear that institutions recognise that further capacity development is needed.

Many institutions are offering research skills training and various workshops, writing retreats, either through faculties, or central institutional postgraduate offices. Some universities reported that they need to expand these programmes.

Research capacity training programmes are required not only when students begin their doctoral programmes (as discussed in Section 4.4.4), but also as ongoing programmes (see for example Section 6.3.1), tailored to match the students' stages in the study life cycle, as their needs change.

Concern

It is a concern that academics in several universities indicated that students are admitted to the doctoral programmes who are under-prepared, with insufficient background or skills (in spite of having the requisite academic standards for their Master's degrees). The result can be poor quality work, long completion times, and/or high dropout rates.

Recommendations

- It is a recommendation that systems for assessing the competence of applicants for doctoral studies, and their potential to develop, should be strengthened.
- A solution recommended by Review Panels, and being implemented in many institutions, is to provide preparatory skills training programmes. In certain cases these programmes are required (although non-credit bearing) and in others they are not compulsory. In most cases, there is little monitoring of their effectiveness and no follow-up to check on the progress of the doctoral students.
- The attendance by doctoral students at research skills programmes should be recorded, and the impact and effectiveness monitored, in relation to the students' progress in their studies. Supervisors should play a role in monitoring and supporting their students in these programmes, and assisting them to make the necessary progress.
- Timeframes for completing the necessary training programmes should be in place.

7.1.4 Other registration issues

According to the HEQSF, and based on the assumption that at postgraduate level achievement of progress comparable to 180 credits per academic year is feasible, the General doctoral degree requires a minimum of two years' full-time study for completion. In fact, three years is the 'normal' expectation for completion of a PhD, and it is the reality that most students in South Africa take more than three years to complete their doctoral degree.

Recognising that the Standard is a threshold statement, it may be concluded that part-time studies will inevitably take longer to meet the minimum criteria for the awarding of the doctoral qualification. However, the definition of 'part-time' in the context of academic studies for doctoral students is open to interpretation. For example, how does evening or weekend employment (to supplement income) affect the 'full-time' interpretation for a doctoral student? There is obviously a consequence in terms of the amount of time available for self-study, literature reviews, writing, etc.

Also, it is the common practice for institutions to hire doctoral students as student assistants, to assist in providing the support base required for the running of practicals, tutorials, etc., for undergraduate students. While doctoral students obviously benefit immensely from such activity, it does bring into question the traditional view of 'full-time' study.

i) Full-time versus part-time registration

While full-time study towards a doctoral degree was more common in South Africa in the past, the reality today is that the majority of doctoral candidates at South African institutions study part-time for the doctoral degree. Such part-time doctoral students are often formally employed on a full-time basis (in some cases, the employment may even be at an academic institution). To take this into account, it is quite common for institutions in South Africa to allow doctoral students to choose whether their studies will be 'full-time' or 'part-time'. This decision is then reflected in the registration details of the student.

The practice of formally distinguishing the registration details of the doctoral student in terms of either 'full-time' or 'part-time' is probably a legacy practice that needs to be reconsidered in terms of its relevance today. The SERs indicate that some of the consequences of this labelling are the following:

- The tuition and registration fees charged to the student account may depend on whether the registration is for full-time or part-time study;
- The eligibility of part-time students in terms of the number of available scholarships, bursaries and fellowships is reduced;
- The value of the financial support offered to part-time students is often lower;
- It has been reported by at least one institution that students have been found to deliberately misuse the registration system by registering full-time (in order to access more lucrative financial support) while in reality studying part-time;
- It is frequently the case that students switch registration status from 'full-time' to 'part-time' after a few years of study (presumably to extend the maximum time allowed by the institution for study towards the degree, or because they take up employment towards the end of their study);
- Some part-time doctoral students expressed unhappiness and dissatisfaction during site-visit interviews. They felt neglected and at times discriminated against by supervisors and academic departments, simply on the basis of being registered part-time. Support provided to them was not as readily available as what they perceived was the case for full-time students. Further, meetings and seminars were set up during times when they were not able to be present. For these reasons, the part-time students felt isolated to some extent; and
- From the institutional perspective, the 'full-time' / 'part-time' registration label adds a further layer of administrative bureaucracy to the academic administrative workload of the relevant faculty. In addition, some institutions that offer financial support to doctoral students (in the form of bursaries, for example), choose to distinguish between support for full-time students compared with support for part-time students – adding further complexity to the university's administrative system.

The SERs revealed that the five private institutions offer the doctoral degree on a part-time basis to take into account the fact that their students are mostly employed at various industries and professional practices. For the 23 public institutions that offer the doctoral degree, approximately half no longer distinguish between full-time and part-time doctoral studies. This implies that approximately half our public institutions still distinguish formally between full-time and part-time studies in the registration details of the doctoral student.

For those institutions that no longer distinguish between full-time and part-time doctoral studies, no registration or administrative challenges were specifically highlighted in the SERs. It is worth noting that the Teaching Input Sub-Block grant of the DHET for doctoral students does not distinguish between full-time and part-time studies.

Recommendation

In order to take into account the reality of a large proportion of doctoral students needing to work part-time during their doctoral studies, and to avoid putting them at a disadvantage, it is recommended that institutions (and the DHET) should not distinguish between full-time and part-time registration.

7.1.5 Research Ethics

National regulations require that all research must be assessed with respect to ethical research conduct, and where formal ethical approval is necessary, no research should be conducted prior to the approval. The National Health Research Ethics Council (NHREC) has national oversight of the composition, competencies and operations of all Health Research Ethics Committees *including* Animal Ethics Committees, and provides the norms and standards for conducting research on humans and animals, and norms and standards for conducting clinical trials. Institutions are required to have Ethics Committees, and policies and processes in place, in order to consider all research projects for ethical approval. It must be noted that research in the humanities and social sciences also frequently involves human subjects and is therefore also subject to these national regulations. (The national Human Sciences Research Council may provide guidance if necessary).

The Standard requires that there must be policy and procedures for ethical clearance of doctoral research projects. It is also a recommendation by the Standard that research involving human subjects should demonstrate benefit to the relevant groups or communities that are participants in the research. Institutional implementation of ethics policies, and monitoring of ethics clearance processes are a critical part of risk management, as well as being a national and statutory requirement.

i) Policies for ethical research

The Review Panel Reports and SERs show that, while some universities have robust ethics policies and processes, not all institutions have clear policies and processes in place for ethical approval of research. This applies particularly to some newer universities and some universities of technology, where doctoral training (and research generally) are less established.

The policies for ensuring ethical conduct of research need to be clear and the processes should be visible and transparent. There is a lack of clarity in several institutions, including at least one traditional university, as to which research projects require ethics approval and what are the levels at which approval is given. In one notable example, most research in engineering disciplines is not subject to ethics approval, and the policies are unclear as to which body gives approval.

The level at which ethics approval is given (faculty/Senate/HDC) is also variable between universities, and several Review Panels indicated a lack of clear processes that take cognisance of the skill and capacity of ethics review panels that may be spread across different departments and faculties. These should be made very clear in institutional policies.

Recommendation

Institutions should have well-defined policies and processes for consideration and approval of ethics applications, with appropriately specialised committees for different disciplines and types of research, and with sufficient capacity to deal with all ethics applications requiring approval.

ii) Time required for ethical clearance

The time required to obtain ethics clearance is noted as an area of concern by several Review Panels. This is particularly important for doctoral studies, where completion times are often problematically long, and the delays are reported to be a contributing factor in many universities. It was noted that, in many cases, the Ethics Committee processes are protracted, resulting in time lags which delay students in starting or making progress with their research projects.

One university indicated that students are required to renew the ethics approval annually; this is not common practice and might add even more delays to the doctoral study. (Note: The NHREC requires annual progress reporting on research involving human subjects.)

Recommendation

There is a need for sufficient capacity and agility in the way Ethics Committees function, and for ways of monitoring the time taken to obtain ethics approval.

iii) Training for ethical academic conduct

Importantly, it is also essential that students, and indeed supervisors, in particular academics that serve on ethics review committees, should be trained and educated with respect to ethics, research integrity and ethical academic conduct (see Section 6.3.4).

This training must include not only aspects such as ethical conduct of experimental research involving human or animal subjects, but also issues of research integrity, such as plagiarism, fraudulent reporting of research, predatory publishing and use of personal and confidential information.

There were few reports of institutions providing training programmes for doctoral students beyond instruction on the process for obtaining ethical clearance for their research. There were also very few reports of in-depth consideration of ethical issues related to the research itself, or to the benefit of communities of research involving human subjects.

Research integrity extends to management of research data and use of research repositories, copyright, protection of personal information, plagiarism, and authorship (among other factors). Only a few institutions indicated that they offered training for doctoral students (and academics) in all these aspects. Some institutions indicated that they have policies for dealing with plagiarism, specifically, and there are disciplinary processes in place to address academic integrity issues. However, some Review Panels indicated that policies and processes were unclear or inconsistent.

Furthermore, in some institutions, students who were interviewed indicated that they were not aware of the policies for ethical research conduct, and had not been trained to understand and comply with ethical approval processes.

Recommendations

- Training in ethics matters (for both doctoral students and supervisors) is critical and needs to be augmented and improved, in many HEIs. There is a need to ensure not only that the requirements for approval of ethics for research are fulfilled, but also that doctoral students receive training on ethical approaches to research, and the broader considerations of research integrity.
- Online training and monitoring of ethics processes is recommended as a useful approach to ensuring that doctoral students have access to ethics training.

7.2 Provision of Supervision

Higher education institutions are required to provide doctoral students with adequate and appropriate supervision, based on national and institutional policies. Training of doctoral students requires that institutions have qualified supervisors available to provide expert guidance in all fields of specialisation where doctoral students are registered.

The Doctoral Standard requires that institutions have policies in place for provision of adequate supervision, including coherence between the research expertise of the supervisor(s) and the research topic being supervised.

7.2.1 Allocation and availability of supervisors

The Doctoral Standard also requires that there should be policies for the appointment of supervisors and to ensure adequacy of supervision, and management of supervisors' workloads.

i) Availability of supervision capacity

Availability of appropriately qualified supervisors is a challenge for many institutions, where significant proportions of the academic staff complement may not hold doctoral degrees themselves and are therefore not qualified to supervise doctoral students, or where there are large and increasing numbers of doctoral students enrolled.

Clearly, there is a need for balance between available supervisory capacity and numbers of doctoral students enrolled, but few institutions articulated a strategy or plan to achieve and manage such balance.

Many universities have programmes to support their academic staff in completing doctoral degrees and thereby qualifying to supervise doctoral students themselves (in some cases using the DHET UCDP programme for support). While this is a valuable long term strategy, it means that the academic staff involved are less available for other responsibilities, and they themselves require supervision.

The need for sufficient numbers of supervisors leads to some institutions engaging external supervisors, which is a helpful approach, provided these individuals are qualified experts. The use of external supervisors is common, particularly for less traditional universities, and the appointment of external supervisors is generally formalised. However, there is evidence that some external supervisors are overused and allocated more supervision responsibility than academic staff members, and there is clearly a need for adequate quality assurance in appointing and monitoring external supervisors. Some concerns were raised, by Review Panels, regarding over-reliance on external supervisors, and excessive outsourcing of supervisory responsibilities.

The use of external supervisors also has other drawbacks. For example, it is not clear whether external supervisors always identify with the vision of the institution and share the ethos of an academic department, and whether they fully appreciate the importance of ensuring that the doctoral graduate attributes are manifest in the student (as is expected of academic members of staff). External supervisors also need to commit to being available to provide guidance and support for students. In a small number of institutions, the external supervisors complained of a lack of support, responsiveness and agility from administrative departments of the institution.

Recommendations

- For those institutions that make use of external supervisors, it would be appropriate to consider putting a system in place to ensure that such supervisors are very familiar with the relevant policies and rules of the institution, and also that there is a signed contract in place that binds the external supervisor to expected responsibilities.
- There is clearly a need for additional supervisory capacity across the national system, and programmes for training supervisors are in place in most universities. However, these are not generally mandatory, and there is usually no certification of the training. There were also few reports on continuous professional training for practising supervisors.

ii) Supervisory workloads, and workload models

Lack of available qualified supervisors can result in high student: supervisor ratios and heavy supervision loads for some individuals, which clearly leads to some contention with respect to overall workloads. In some cases there is tension related to expectations that supervision is additional to 'normal' academic teaching and administrative workloads, and that the responsibility of supervision is allocated unevenly.

Few institutions reported having clear guidelines as to what an appropriate supervisory workload is, and SERs reported wide variation in the number of doctoral students per supervisor (examples vary from 1 to 3 students, to more than 12). Some institutions indicated that a very small percentage of staff have a much higher than average supervisory workload. This appears to be more prevalent in certain disciplines and with certain categories of staff (e.g. South Africa Research Chair Initiative (SARChI) incumbents, who are expected to take on a considerably higher load of postgraduate supervision).

Some institutions also expressed an acceptance that some supervisors may readily be able to supervise a higher-than-average number of doctoral students with great success. Of concern, however, is that at some institutions, a significant percentage of the academic staff would appear to be not involved in any doctoral supervision at all. This represents a lost opportunity for the institution. While this may be due to their interests in other aspects of teaching and learning, or a lack of students interested in the field of study, review reports did express some concerns about uneven allocation and acceptance of doctoral students for supervision.

The responses of institutions to managing supervisory workloads are varied: One institution indicated that *"…the management of supervisory workload largely occurs at an individual level and tends to be a spontaneous balancing of all the commitments and responsibilities associated with academic work"*. At other institutions there appears to be the intention to apply a cap on the maximum number of doctoral students that one academic can supervise (perhaps through the application of a suitable workload model).

Several institutions have workload models (related to academic staff performance processes) which include doctoral student supervision and graduation as metrics in the model. In some, efficient and successful supervision of doctoral students is a requirement for promotion. In some institutions, including one traditional university, staff indicated that the workload policy was inflexible and did not distinguish sufficiently between supervision in different disciplinary areas, or between main and co-supervision, or supervision between full-time and part-time students, etc.

Staff workload models based on the doctoral student time to completion were reported to have led to problematic unintended consequences, in at least one institution where supervision is incentivised. This policy, of incentivising supervision, was seen to work against co-supervision practices, collaborations and the offering of collective support for doctoral candidates.

Recommendation

In institutions where workload models are applied, there is a clear need for nuanced and flexible models that will take into account the requirements for supervisors to demonstrate efficiency with respect to graduation throughput, balanced with the needs of students for adequate supervision and time to complete their study.

In managing supervision loads, the cohort supervision approach may be useful (see next section), but may work better for certain disciplines compared to others, where one-to-one supervision is more appropriate. Further, the support primary supervisors receive from co-supervisors (where appointed) can make a difference in managing supervisory workloads.

Ultimately, what is important is the quality of the supervision received by students. The successful graduation of doctoral graduates within an acceptable timeframe should be used by the institution as a guide for defining acceptable supervisory workloads.

Recommendation

For supervisory management to be guided by the expectation of graduation within defined timeframes, institutions need to have in place effective systems that can regularly monitor the progress of doctoral students as well as the performance of supervisors.

iii) Allocation of supervisors

The processes for allocation and appointment of supervisors are highly variable across, and within, institutions. In some cases, the processes are well-managed, with clear policies and processes overseen by Heads of Department and Deans, or Senate/ institutional or faculty committees.

However, in a few universities, SERs indicated that the allocation of supervisors is problematic in that there is insufficient oversight, and a lack of clear approval processes. Where the allocation is conducted on a somewhat individual (or *ad hoc*) basis, possibly by a Head of Department, but with insufficient consultation, both supervisor and student may be compromised, with few options for appeal. This can lead to students not being able to start their projects, or to poor supervision during the study, if there is some mismatch between supervisor and student.

Criteria for allocation of supervisors, in most cases, do include alignment of the supervisor(s)' expertise and the research project to be conducted by the student. This is noted as being particularly important in the case of external supervisors. The appointment of co-supervisors or supervisory panels is one approach to ensuring adequate supervisory coverage, but few institutions reported on how this is managed.

The practice of appointing less experienced supervisors (often, early career academics) as co-supervisors, working with more experienced supervisors (usually established researchers) is common. This is an expectation of the Standard, as a developmental practice. In most cases it is viewed as a constructive approach to growing supervisory capacity and developing the early-career academics. In some reports, particularly from recently established institutions, however, this practice is viewed as an imposition on the workload of a few experienced supervisors, whereby they then had the added responsibility of training their colleagues as well as the students.

Some Review Panels commented on the time taken for the allocation/appointment of supervisors, again, a delaying factor for the progress of the student.

7.2.2 Supervision models

i) Traditional supervision models

No universities were reported to impose specific supervisory models, and within all institutions there is clearly variation and flexibility in modes of supervision. The most common model for supervision in all institutions is the one-on-one supervisor-student (apprenticeship) model, with the exception of one private institution where the cohort model is an intentional focus.

It is noted in several of the Review Reports that the apprenticeship model can lead to challenges in terms of power dynamics between supervisor and student, which can be exacerbated by differences in background or culture. This is also recognised widely as a disadvantage and calls for consideration of alternative models for supervision.

Co-supervision, involving two or more supervisors per doctoral student is very common, with external supervisors often added to a supervisory panel, bringing in additional expertise; this is especially common where the doctoral study is in a field closely related to industry or the business sector or in a highly technical area. However, it is also noted that an internal supervisor is usually required, in order to manage administrative aspects.

Students who were interviewed in the Review Panel visits commented that they found significant benefits in having more than one supervisor. However, in some cases they reported differing views or approaches from different supervisors leading to some tension and difficulty. This is also widely recognised, and should be managed through MoUs (see Section 7.2.3) and departmental monitoring.

ii) Innovative practices

Several institutions reported recent developments moving towards new approaches, including the cohort model, use of supervisory panels, and inter-disciplinary supervision teams, as examples. This is generally viewed as a valuable approach, especially where the doctoral studies are in inter-/multi-/transdisciplinary knowledge areas. In several cases, including at least two comprehensive universities, there is an explicit strategy of innovating by using supervisory teams, and cohort approaches. An additional innovation is the introduction of peer support networks, and some universities are supporting peer group student communities of practice. These may be considered good practices, to be recommended.

iii) Transdisciplinary studies

As already mentioned in Section 6.3.3, in cases where interdisciplinary, multidisciplinary or transdisciplinary research is involved, one supervisor seldom has the breadth of expertise to provide adequate guidance. There is a clear need for approaches where supervision can be provided by a team or panel that can bring a range of expertise and viewpoints to support the student.

Similarly, participation by doctoral students in interdisciplinary student peer groups can provide breadth and diversity to inter- or transdisciplinary projects.

In transdisciplinary studies, there is potential for difficulty in allocation of supervisory responsibility between supervisors who come from different disciplinary fields, and this can lead to differing levels of support for doctoral students, with the consequence that the student may feel insufficiently supported.

Recommendation

It is recommended that all supervisors and co-supervisors of doctoral students who undertake transdisciplinary studies, and the students, should ensure that they have a mutual understanding of their roles and responsibilities.

7.2.3 Formalisation of arrangements between supervisors and students

While the Standard for the doctoral degree does not specify that a policy on formal agreement between supervisor and doctoral student is required or expected, it does require that there should be policies for the roles and responsibilities of students and supervisors, and criteria for interaction between student and supervisor.

Most HEIs reported that they do have such policies, and in most cases a Memorandum of Understanding (MoU) or equivalent formal agreement such as a Memorandum of Agreement (MoA) is part of the policy. However, the implementation of these policies is clearly very variable.

The use of a MoU is not uniform across the higher education sector in that, in some cases, it is mandatory, and in others, a recommended practice. Within many institutions, the application of the MoU policy is also inconsistent. A MoU between supervisor and student should set out the expectations regarding research outputs, deliverables and milestones, and should be useful as a guide in monitoring progress and meeting quality standards.

Several Review Panels expressed concern that the MoU was not being applied uniformly and/or was not adequately recorded and monitored. Furthermore, there were some reports of a disinclination of supervisors to implement the MoU, and in some instances the implementation of the MoU appeared to be at the discretion of the supervisor.

Many reports indicated that although policy requires the MoU, and it is implemented at least in most cases, the use of the MoU as a means of monitoring student progress is inconsistent. It is also noted that the MoU provides a means of tracking the performance of the supervisor.

Recommendation

There is a need in some institutions for academic managers to more effectively ensure that the policy on the MoU (or MoA) between student and supervisor is adhered to, and monitored. The development of the MoU should be discussed by supervisor and student, and expectations agreed as a constructive means of guiding progress in the doctoral study.

Of additional concern is the degree to which students seem to be unaware, or inadequately informed, about the MoU that should be in place in their faculty/institution, and its terms and criteria. While, in a few cases, the students did indicate that they regarded the MoU as a useful resource in guiding their progress and their interaction with their supervisors, in many cases they indicated that they were not aware of the MoU at all, or that it was not useful to them.

7.3 Progress Monitoring and Review

7.3.1 Monitoring Student Progress

The Doctoral Standard requires policies and procedures to be in place to monitor progress in doctoral studies, including formal progression procedures to check the level of knowledge and skills, and informal discussions with the candidate's supervisor(s). This includes written submission and oral presentation.

Most institutions indicated that doctoral student progress is monitored through annual, or, in a few cases, more frequent, reviews, usually conducted by the supervisor and sometimes reported to the Head of Department of a committee. Few universities reported that they conduct formal processes of continuous assessment, other than progress reports from supervisors which are often based on the MoU. In a small number of cases, departments or faculties require doctoral students to present at regular research seminars, and this is regarded as a way of monitoring progress.

The policies and processes for monitoring doctoral student progress should be transparent and clear to students as well as supervisors, HoDs and Deans, and should be applied consistently across institutions. However, in some cases, the policies are not well understood or applied, and processes are not implemented consistently and, as noted above with respect to student selection and admission, may affect the student's research proposal, ethics approval and other processes, and consequently progress. It is of concern that, in many cases, records of student progress appear to be kept at supervisor level, and are not recorded centrally, or formally. This means that, while a supervisor may have knowledge of a student's progress, the records may not be available for monitoring at higher levels and therefore may not be useful in any cautionary or disciplinary proceedings.

It would seem appropriate and logical to require that digital records be kept, but this is not a common practice in many institutions, and only a very small number (4) reported that they have digital systems in place for monitoring progress across their institutions. It should be noted, however, that these systems would need to be set up and implemented in such a way that they ensure effective monitoring of student progress and well-being, without adding undue pressure on the student.

Few universities have mechanisms for ensuring *compliance*, by supervisors and students, with the processes for monitoring student progress. In addition, according to many of these policies, the HoDs (or departmental or faculty committees) are responsible for monitoring the progress of doctoral students, but it is often not clear what measures are taken if progress is not adequate.

Slow progress is obviously a factor which leads to long completion times, and is problematic both for students and institutions.

Recommendations

- It is a recommendation that all institutions should have robust systems in place to keep records of student progress, and ways of using the records to provide early warning of slow progress. Where progress is not satisfactory, barriers to progress should be identified as early as possible and action plans be developed to address the issues of concern, including referring the student to support systems and programmes that are available in the university.
- An online progress monitoring system would enable progress to be recorded and monitored throughout the whole life cycle of doctoral studies.

7.3.2 Information and awareness of regulations and processes

As mentioned already in section 6.4.3, the Standard requires that students and academics should all have access to, and be informed about, the policies and processes that apply to doctoral study. These would range from institutional level General Rules and Regulations, to Senate-approved policies, and Faculty or Department rules.

Such policies should be published and made available to all parties involved in the doctoral training programmes. The expectation should be that students and supervisors are aware of all regulations and rules related to the doctoral programme, but this is often not the case.

Similarly, the processes that are applied to ensure compliance should also be clear and transparent, and should be consistently applied across institutions. It is clear from the review reports that this is not always the case. The policies and processes are implemented through different systems in different faculties and departments, and where this is the case, there is a need for review and development of more consistent practices. However, even in instances where policies are applied differently in different sectors, it is important for all parties involved to be informed of what the policies and processes are.

It is clear from some of the Review Panel Reports that, while most institutions have policies and processes in place, related to doctoral studies, there is an apparent lack of awareness about some policies and processes, especially among doctoral students.

Recommendation

Communication of policies, processes and rules applicable to doctoral study should be a high priority, and all Heads of Department and supervisors should ensure that they, and their students are fully conversant with the content of all of these rules.

7.3.3 Student academic support and development

i) Support for academic development

The provision of ongoing academic support for doctoral students is highly variable across the sector. There are some examples of excellent support programmes, especially where a university has a Postgraduate Centre and staff dedicated to supporting postgraduate processes. Many institutions reported that they offer training and capacity-building programmes for doctoral students, including research methodology training, writing skills development, etc. Ideally, this should include consultants with specific disciplinary expertise as well as knowledge of academic development.

This is a response to the recognition that students may be initially unprepared for doctoral study. It is also recognising that doctoral studies encompass broader development and require further academic growth than what can be achieved through the research project alone.

Some institutions, particularly the traditional universities, have well-established programmes for skills development and support for ongoing development of research skills. In newer or less established universities, there are also programmes being developed, in some cases in collaboration with partner universities. These programmes may be centralised, or offered through faculties, or through a combination.

Writing Centres dedicated to assisting postgraduate students were reported on, in several SERs and Review Panel Reports. These centres have been established to specifically develop competence in academic writing and communication, including relevant digital literacy skills appropriate for doctoral research (as required by the Standard). These Writing Centres are, however, found mostly in traditional institutions. The concern was raised that dedicated Writing Centres for doctoral students are absent in many institutions. While Writing Centres offer valuable support to doctoral students, it is important to recognise that they do not replace the role of the supervisors in guiding their students, and creating opportunities for the students to develop and practice their skills in writing and presenting arguments, throughout their doctoral studies.

Some institutions mentioned that libraries are also providing support for students to acquire digital skills but explanations of how this is achieved were generally lacking in detail. In order to ensure effective assistance, it would be important for staff in libraries (for example librarians, archivists, data and information specialists) to be trained in the particular needs of research by doctoral students.

An example of good practice in one well-established university was the training offered to postgraduate students in science communication. Another is the establishment and coordination of special interest groups, and peer group study teams.

Some reports indicated that these academic development programmes are not monitored and records of attendance are not kept. Similarly, few institutions have any measure of their impact or success in achieving the objectives of supporting the student academically. Many lessons could be learned by assessing the success (or lack of it) and effectiveness of academic support programmes offered to doctoral students.

Recommendation

Systems for monitoring and evaluating the impact of academic support interventions for doctoral students should be established and maintained in faculties or institutionally. These are not yet in place in all institutions, and could usefully be developed nationally, for the benefit of all institutions.

ii) Dedicated Postgraduate Schools or Centres

A number of universities described the dedicated Postgraduate Centres or Schools that they have established in order to support their postgraduate students. Some of these are established at faculty level, others at institutional level, and there is wide variation in their roles and functions. In most cases, the Review Panels reported that such centres provide a valuable source of support and guidance for doctoral students.

Of particular value are Postgraduate Schools whose activities involve academic and intellectual input, as well as administrative assistance. These can provide an enabling and supportive environment, with interaction between peer students and academics. Postgraduate Centres that offer programmes for research capacity development, short courses and workshops (for example on proposal writing and literature reviews, and on the writing of theses, statistical analysis etc., and preferably offered by qualified academics), and administrative support (for example for postdoctoral scholarships programmes) are also of great value and are generally greatly appreciated by the doctoral students themselves.

Postgraduate Offices dedicated to administration of postgraduate programmes can provide valuable support in roles such as planning and monitoring of enrolments and progress as well as development of policies, structures, systems and processes relating to postgraduate studies.

Recommendation

The establishment of structures that support both the academic and administrative aspects of doctoral study is recommended as a means of enhancing doctoral students' experience and their progress towards satisfactory achievement of the degree and graduate attributes.

iii) Support in personal matters

The Review Reports showed that there is less provision of structured/formal support for ongoing personal development and addressing challenges that doctoral students experience personally.

In some universities, notably large comprehensives and UoTs, Panel Reports indicated that many students find themselves with personal problems (e.g., financial, family, accommodation, access to campus issues, etc). This seems to be particularly severe for international students, and those whose homes are far from the university. Such difficulties undoubtedly lead to delayed completion of doctoral studies and, in many cases, result in the student dropping out of the programme. Counselling and advisory services for doctoral students, where they do exist, are clearly inadequate, or not sufficiently visible, in many institutions.

Recommendation

Support and advisory services for doctoral students experiencing personal difficulties are necessary and could contribute to improved experience and improved completion times.

iv) Mentoring

Mentoring programmes for doctoral students were not mentioned in many reports. In such programmes, experienced individuals (who are not the main supervisors, but are academically qualified) can offer the student advice, informal support, and wisdom, (complementary to formal supervision). It seems that few universities regard the provision of mentorship as a high priority, or are even aware that such programmes may be useful.

v) Engaged Scholarship

In the interests of broadening and enriching the experience of the doctoral student, and providing opportunities for transdisciplinary approaches, a few institutions involve their doctoral students in outreach activities, or "engaged scholarship". These are coordinated programmes that have, as their purpose, ways of enabling students to engage with a wide range of stakeholders and communities outside of their immediate research group.

7.3.4 Mechanisms for addressing student appeals and complaints

The Standard requires that there should be procedures in place to allow for appeals against examination decisions. However, student appeals and complaints cover a range of issues, and a broader set of policies and procedures is required. Thus, institutions need policies and procedures to address: appeals against formal decisions; complaints about other aspects of their studies (such as poor supervision, or inadequate access); and unusual circumstances.

i) Appeals related to assessment

Appeals related to formal decisions (such as proposal and ethics approval, allocation of supervisors, thesis examination outcomes) require decision-making through formal processes, involving the appropriate university authorities and structures. Policies and, where available, an institutional Code of Conduct (or equivalent) would normally serve as a starting point for addressing appeals

and complaints. In addition, the policy framework which covers all aspects of the doctoral programme should give relevant policy information to guide the way in which appeals are addressed, and what should be the outcomes of appeals. Nevertheless, appeals generally need to be addressed on an individual level, and clear routes for consideration and fair decision-making are needed.

The Review Panel Reports showed that mechanisms for addressing student appeals are not well established or well understood in many of the institutions. In many cases, the procedures for submitting appeals are not clear in the institutional documentation, and neither are the procedures for addressing the appeals. The routes for addressing student appeals should be clear and transparent, and, in many institutions, additional attention is required to make the processes more accessible. There are instances where the appeals processes are handled at different levels in different faculties in one university, and with varying degrees of formality. It is of concern that in some institutions, student appeals processes are not formally addressed.

Recommendation

It is recommended that all institutions should ensure that the processes for students and supervisors to appeal decisions made regarding the assessment of their work, at all stages of the doctoral study, should be transparent and accessible to the students and academic staff.

ii) Complaints

Complaints may be of a less procedural nature than appeals against assessment decisions or unusual circumstances, and also require individually-focussed responses (such as matters related to student-supervisor relationships, access to research facilities, financial issues, etc.), and these may require intervention by HoDs and faculty structures, Postgraduate Offices, or Student Counselling services.

The SERs and Review Reports showed that mechanisms for assisting with student complaints and difficulties are not sufficiently visible and students in some institutions feel unsupported.

iii) Adequate provision for unusual circumstances

The Review Reports indicated that there needs to be adequate provision for unusual circumstances that would include, but are not limited to, apparent conflicts of interest, student leave, extension as a consequence of indisposition, suspension of studies, exceeding the maximum period of enrolment, and termination of enrolment.

Many of these cases would need to be addressed on an individual basis and processes for this need to be in place. Most institutions have indicated that they have procedures to deal with matters such as requirements for leave or extension of registration, and termination of studies. Some are quite specific regarding conditions and processes for extension of registration, especially where the institution has strategic objectives and specific conditions with respect to completion times.

Recommendations

- There is a need for clear and definitive communication regarding processes for lodging appeals and complaints, and transparency on the way in which such appeals or complaints will be addressed.
- It would also seem appropriate to provide counselling services for students seeking to lodge appeals and complaints, to ensure that they have a clear understanding of the implications of their choices, as well as the processes which are in place and which will be implemented in addressing their matters of concern.

7.4 Submission and examination processes

7.4.1 Submission requirements

The Standard requires that HEIs have policies on the minimum, typical and maximum duration of doctoral programmes, as well as on the following:

- the submission process: the intention to submit, the regulations on submission procedures, and the thesis submission;
- the form and substance of the submission, and the evaluation of originality, coherence and contribution to knowledge in the context of diverse types of research production;
- any additional requirements over and above the submission of research work, such as peer-reviewed publication, if applicable;
- ensuring that the student's work is original, with adequate procedures for identifying, assessing and penalising proven instances of plagiarism;
- ensuring that any significant material assistance by others towards the completion of the thesis is declared; and
- satisfactory evidence that the implementation of submission policies is monitored and documented.

i) The submission process and procedures

Most institutions provided evidence, in their SERs, of formalised policies and procedures for submission of theses. The Review Panels noted, in most cases, that the policies were in place, and the majority of institutions have clear policies for approving the submission of theses and verifying the originality of the research. The rules and regulations guiding the submission processes are generally available in the institutional General Regulations (or equivalent).

In most cases, the student is required to indicate their intention to submit the thesis, and there follows a series of steps which may include a record of the supervisor's approval. In some universities there is a policy that allows for a student to submit their thesis without the supervisor's consent, and this is then recorded for future reference. In some cases, the student's indication of their intention to submit is the point at which examiners are appointed, and in other cases the appointment of examiners is completed before this, through a faculty or institutional process based on the stage of the student's study. There does need to be provision for a supervisor to indicate their approval for the submission, or to indicate if the student decides to submit the thesis without their approval.

There is some variation in the levels at which the intention to submit is approved, with some based on the approval by the supervisor, and others by HoDs and/or Deans or faculty committees, or Senate committees. This will depend largely on the context of the institution, and what is key is that the supervisor's views are considered, and that the approval is formalised, and recorded through a specified committee process.

Recommendation

Institutions should ensure that they have clear processes for students to indicate their intention to submit the thesis. These should include processes for supervisors to indicate their approval (or not) of the submission, and identification of the faculty or Senate committee which gives final approval.

ii) Monitoring and documentation of submissions according to policy

Evidence was provided by most of the institutions for processes that they use to record and monitor submission of theses, often through a centralised office which is responsible for documenting the receipt of the thesis and dispatching it to the external examiners. The Review Panel Reports indicated that most universities keep accurate records of the submissions and monitoring of the examination process with regard to aspects such as reminders to examiners, receipt of reports, etc. There is wide awareness of the need for efficient management of the processes, and for maintaining confidentiality with respect to examiners and reports.

iii) Form and substance of submission

All institutions accept a doctoral thesis as the submission for examination, and most have clear specifications as to what is required in terms of the content and structure of the thesis.

The option of submission of a thesis based on publications is varied, in terms of requirements and structure. In many cases, a thesis is accepted in which some chapters are full publications, inserted into the thesis, and these are then discussed and contextualised through introductory and concluding sections. The option of simply assembling and submitting a set of publications is less common. In most cases, the rules for submission by publications require that the student writes the introductory and concluding sections to describe the research hypothesis, approach, scope, and contribution to knowledge, etc. In a few cases where this format is used, the university includes in its rules a specific (usually minimum) number of published articles required, in cases where this format is used.

The option of submission of creative outputs – for example, art works, creative productions, etc. – is permitted in some universities, and the common format is through the compilation of a portfolio which then includes systematic discussion of the work. Very little information was provided in SERs as to the processes and policies on submission of creative outputs and this is possibly an area which requires more attention.

Recommendation

Institutions should set out clearly their policies and procedures for the submission of all forms of the doctoral thesis, including by publication, and with inclusion of creative outputs.

iv) Confirmation of an original contribution to knowledge

Confirmation that a doctoral study has resulted in an original contribution to knowledge is a requirement of the Doctoral Standard:

"The Doctoral degree requires an original contribution to knowledge, [which may – and, in the case of a Professional degree, should – contribute to the advancement of professional practice, and] that can be disseminated to relevant parties in order to contribute to the advancement of knowledge in the relevant field of study, discipline, profession, or creative domain."

Most institutions state in their regulations that the thesis must constitute a substantial contribution to knowledge in the chosen field, and some also state that it must contain only the original work done by the student (with acknowledgement of any related contributions – see the paragraph on co-authorship, below). In most universities, students are required to sign a declaration of their work being their own original contribution, and supervisors are required to confirm compliance with the institutional requirements. In practice, this confirmation generally requires motivation by the supervisor, and further confirmation is received in the reports of the external examiners. Examiners are frequently asked to comment specifically on this aspect of the doctoral research and thesis.

Most universities also require evidence of plagiarism checks. Where substantive plagiarism is found (based on a similarity index, for example), the matter is generally dealt with through disciplinary processes. It is to be noted that text-matching services are limited and mechanistic in their application; they should be applied judiciously, and their results should be considered with high levels of academic skill, taking into account variability between disciplines and theoretical areas.

There is also often a requirement that the thesis contains a statement that confirms ethical approval of the study. Where confidential information has been used, this is also required to be noted, and examiners may be requested to adhere to this requirement as well.

There is some debate regarding the practice of students using professional editing services and receiving substantial help from writing centres, or relying on critical readers. The concern is about the extent to which the thesis in the end does not demonstrate

the student's competence in scholarly writing (as required in the Standard). It is important that students understand that they can discuss and take advice, but that they must take responsibility for content and quality of the final thesis.

Recommendation

It is a recommendation that institutions should develop a clear understanding of the extent to which such assistance is acceptable, and further, that writing centres should monitor and manage this assistance within these expectations.

v) Submission of a research article

Many institutions require that a peer-reviewed article must be submitted, by the doctoral candidate, to a recognised journal; a few require that the article should have been accepted for publication; and a small number accept submission of an article for a conference presentation. Evidence for this is generally required to be provided, at the time of submission of the thesis.

One traditional university commented that the requirement for acceptance of an article in a peer-reviewed journal can lead to delays in completion of the doctoral degree, and they therefore require only preparation of the article, but not acceptance by the journal. Some academic researchers and students questioned the motivation for this requirement, and some suggested that it was focused on increasing the university's subsidy, with negative implications for student throughput, increased levels of poor-quality publications, and pressure on journals to manage the review processes thereof. Others saw this policy as a means of ensuring wide dissemination of doctoral research and assisting students in achieving their graduate attributes.

The requirement of an article ready for publication, or already published, can create a problem in terms of the potential for submission to predatory journals, or "ghostwriting" of articles, and a few universities reported this as a challenge that needs to be managed. Clearly, this academic malpractice is not acceptable and where it is found, disciplinary action should be taken.
A few universities raised the matter of the cost of publication of an article. With the trend of moving to Open Access publication, the matter of page charges has created a new set of challenges, where universities may need to develop policies and processes to address these charges through library or research budgets. There was also mention of a few instances where the cost of publishing is left to the student; this is unacceptable, particularly since DHET subsidy for publications goes to the institution.

Recommendation

Institutions should have, or develop, clear policies regarding their requirements regarding publication of article(s) emanating from doctoral theses, and should implement processes to support the policy, including addressing the matter of costs, as well as authorship and ethical writing practices. Unless there are good reasons to the contrary, the policy should be applied uniformly across all faculties, schools, departments and disciplines.

vi) Issues of co-authorship and material assistance

Most universities have made it explicit, in their rules for submission of a thesis, that the student must acknowledge and explain the extent and nature of any work to which others (including the supervisor) have contributed, and/or where they received material assistance. (This is a requirement in the Standard).

Where publications are reported, or included, in the thesis, which have co-authors, the contributions of the student and the co-authors are generally required to be clearly explained. This matter should be included in the rules and guidelines for completion of a doctoral thesis which includes publications.

It is noted that the issue of the supervisor's contribution to a publication varies between disciplines. In the Humanities, for example, the student is often expected to publish an article as the sole author, whereas co-authorship is more common in the

natural sciences. It is noted that a student's lack of confidence as a single author may delay or limit publication, and support from the supervisor(s) remains important.

7.4.2 Final Assessment

The Doctoral Standard requires that institutions have the following policies:

- Policy for the selection of examiners that guarantees expertise in relation to the topic of study, independence, integrity, fairness, reliability and rigour of the examination process, the number of examiners (internal and external), and criteria for selection.
- Policy for the coordination and approval of examiners' reports; criteria and responsibility for deciding to award the degree; quality assurance and consistency of standards applied across the institution.
- Where oral examination is part of the final assessment process, procedures for such oral evaluation/examination.
- Policy, and evidence of inter-institutional agreement, for the award of joint, dual and co-badged degrees.
- Evidence that there are appropriate measures for ensuring the security, validity and reliability of Doctoral certification.
- Provision and procedures for appeals against examination decisions.

All institutions reported in their SERs on the extent to which their policies include these, and the sections below outline the review reports on each aspect:

i) Selection of Examiners

The Standard requires that institutions must have policies for the selection of examiners that guarantees expertise in relation to the topic of study, independence, integrity, fairness, reliability and rigour of the examination process, the number of examiners (internal and external), and criteria for selection.

In all the SERs, it is stated that examiners for doctoral theses must be appointed in accordance with the institution's policy on higher degrees (or equivalent). In some cases, the policy is implemented at faculty level, and in a few cases, at department level. The latter is of some concern, if there is insufficient senior oversight and consistency.

> *Recommendation*
>
> It is recommended that universities put in place oversight mechanisms to ensure compliance, fairness and consistency across the institution, in appointment of examiners. This may best be achieved through faculty-level or institutional-level Higher Degrees Committees (or equivalent) [see sections below on: Criteria and responsibility for deciding to award the degree, and Role of Higher Degrees Committees].

Most institutions have clear rules and processes which make explicit the process for appointment of examiners, the number of examiners who will be appointed to examine a thesis, and whether the examiners must be external to the university, or not. In a small number of cases, several examiners (4 to 6) are nominated by the supervisor or department, but then only two or three are requested to do the examination. It was noted in a small number of cases that this can lead to confusion for those examiners, if they were initially invited to be examiners, but then are not engaged to do the actual examination. It was noted by some examiners that communication was lacking or unclear, and it is important that communication with all examiners is clear and comprehensive. In other cases, more than the minimum number of examiners are nominated, but only the requisite number are invited initially, and the other nominations are held 'in reserve'.

In some institutions, an internal examiner may be appointed, but two or three others must be external. It was noted that the appointment of internal examiners may be problematic, in that they may not be completely impartial. Some institutions specify, or encourage, the appointment of international examiners. This may be regarded as an indication of international recognition for the research and/or the institution, or a sound way of assessing the quality of the thesis, since a PhD is generally regarded as an internationally-recognised degree.

Examiners for doctoral theses are generally required to hold doctoral degrees themselves. In certain instances, an examiner may be appointed without having a doctoral qualification (for example, in the case of an expert in a medical or industry-related field), and this would then require that the supervisor provides a motivation for the appointment, and this would then be approved by the relevant faculty or institutional higher degrees committee. Most institutions indicated that they require examiners to have an appropriate academic (or industry) research profile, experience and stature, and the assurance of this is part of the consideration of nominated examiners before they are appointed.

It is also generally a specified regulation that examiners would not have had any prior involvement with the project, and that supervisors and co-supervisors cannot be appointed as examiners. Rules generally also specify that any person who may have a conflict of interest, or may be in a position where they cannot be fully objective, cannot be appointed as an examiner.

Recommendation

Institutions must have in place clear and explicit policies for the selection and appointment of examiners, which determine the rules for all aspects of the process, including aspects such as frequency of appointment, use (or not) of internal examiners, relationships of examiners with the institution and/or the student and supervisor, and how any conflicts are to be addressed.

ii) Coordination of examiners reports and procedures of examination

The Doctoral Standard requires that there should be policies in place for coordination and approval of examiners' reports. All institutions gave accounts of their processes for examination, including explanations of the procedures required of examiners, and instructions regarding the format for feedback from examiners.

External examiners interviewed in the review process were mostly positive about the information they were provided with, and the processes that they were expected to follow. In a few cases, they indicated a lack of clarity, particularly with how the examiners' reports were handled after they were submitted. There were some questions as to what process was followed in addressing the recommendations of the examiners and requirements for revisions. In addition, some examiners indicated that they were not informed of the final outcome of the examination, and that they would have wished to be informed.

Some concerns were raised regarding the management of examiners' reports, particularly with regard to the time allowed (or taken) for examiners to submit their reports, because such delays with overdue examiners reports cause delays in the finalisation of the examination and graduation. Most institutions did report on their processes and systems to maintain records, but clearly some are lacking in this regard, and in these cases, their systems would need to be improved.

The reviews indicated that examiners' reports are generally approved by the faculty or institutional committees responsible for oversight of doctoral examination, based on a set of criteria which set out the expectations regarding the thesis and the feedback from the examiners related to quality, originality, contribution to knowledge, adequate presentation, etc.

Recommendation

Institutions must be very clear in keeping records of submissions and examiners' reports and of all communications with examiners, from the start of the examination process to its conclusion, to avoid reputational risk or confusion.

iii) Criteria and responsibility for deciding to award the degree; quality assurance and consistency of standards applied across the institution

The criteria and processes for decisions on award of doctoral degrees are generally clear and well-documented in institutions' policies and procedures. In most cases, a Higher Degrees Committee, at Senate or faculty level, makes the decisions taking into account input from the relevant supervisor and Head of Department, and the examiners.

Where a thesis is approved by all examiners, or requires only minor revisions (to be approved by the supervisor or at departmental level), the process is quite clear in most institutions. The ways of dealing with major revisions, revisions requiring resubmission, where the reports call for substantive changes and/or subsequent re-submission are much less clear in many cases and, in several Panel Review Reports, there was a call for refinement of the policy and processes and provision of clearer information.

Processes for addressing cases where there are major differences between the recommendations of the examiners, situations where an arbitration process is required, or where failure of a doctorate is considered, are also often not clear and, in many instances, improved policies, and information, are required. In instances where a doctoral study is failed, universities generally recognise the need to consider the reasons for the failure, including quality of the supervision and support that the student received during their doctoral study.

An important point to be considered in the decision to award a doctoral degree is that the failure of a doctoral thesis should not entitle the candidate to a Master's degree. Most institutions have explicit rules that adhere to this principle. Less clear is the situation where a student has been permitted to upgrade their registration from Master's to doctoral level; if the thesis is then failed, the question of awarding a Master's degree is less clear. However, this issue should be guided by the fact that a degree can only be awarded to a student who has been registered for that qualification and, therefore, the student would need to re-register for a Master's programme, and probably revise the thesis and re-submit it as a Master's dissertation.

Recommendations

- Failure of a doctoral thesis should be seen as cause for consideration and review of the quality of the doctoral programme, the department (or academic unit), and the processes and support provided to the student concerned.
- As an important principle, institutions should have the rule that a doctoral student whose thesis has been failed cannot be awarded a Master's degree.
- The final decision on the assessment outcomes of a doctoral thesis should be taken by a formal committee designated by the Senate. Ideally, this should be an institutional Higher Degrees Committee.

iv) Role of Higher Degrees Committees

In some institutions, approvals and confirmations are overseen by a faculty or institutional Higher Degrees Committee (or equivalent, such as a Doctoral Degrees Board). However, it is noted that some institutions do not have Higher Degrees Committees or equivalent, which should be regarded as a serious deficiency. Doctoral degrees, being any institution's apex degree, carry the expectation of international recognition.

Recommendation

It is recommended that doctoral degrees should be confirmed at the level of at least a Senate-approved faculty committee, but preferably a Senate-approved institutional committee such as a Higher Degrees Committee.

v) Use and status of oral examinations / defence

The Standard calls for institutions to have a policy on the use of oral examinations, and if this oral examination is part of the final assessment process, procedures for such oral evaluation/examination are required to be in place.

The Standard also suggests the use of oral examinations as one means of demonstrating a doctoral candidate's independence, competency, and communication skills and, in addition, of demonstrating that the student has achieved in-depth understanding of their research and its principles, as well as broad knowledge of the field of research. (These expectations are aligned with the achievement of certain graduate attributes).

Some institutions regard the combination of the submitted thesis and the oral defence as a way to rigorously ensure the *'integrity and ownership of the thesis and assessment of the candidate's abilities'.*

In many institutions, the oral examination / defence is optional, and is used in instances where it is necessary to confirm a student's achievement of some (or all) of the expected graduate attributes, such as reflection and autonomy, and independent ownership of the work reported in the thesis. In other instances, the oral defence is more of a celebratory presentation (a 'rite of passage'), with no associated regulatory requirement. In other cases, the oral defence is used to obtain an agreed recommendation from the examiners, either as a standard step in the examination process, or as an option when there are conflicting assessment results.

It is noted that an oral examination, especially one which requires a presentation, discussion of the research and the thesis, and engagement with examiners, provides a useful means of assessing the achievement of the graduate attributes.

Recommendations

- It is a recommendation that all institutions implement oral evaluation of doctoral degrees, since this is a key element of assessing achievement of the graduate attributes.
- In all cases, the process to be followed for oral examinations must be clear and the oral examination must be conducted according to specific guidelines, based on faculty- or discipline-specific requirements. It should be made explicit whether the oral examination precedes or succeeds the thesis examination, and how it can influence the final examination outcome.

vi) Policy on inter-institutional agreements and award of joint degrees

While the SER did not specifically request information about the internationalisation of doctoral degrees and international students, the reality is that most if not all of the 28 institutions that currently offer the doctoral qualification, have international students - some in significant numbers.

In many instances, doctoral students are involved in inter-institutional research collaborations or inter-institutional programmes, whereby the doctoral study is conducted and/or supervised collaboratively, between institutions. This may mean that the student has a supervisor or co-supervisor from each of the collaborating institutions, and the student may be registered at one of those institutions. However, an alternative model may involve receiving a joint or shared degree from two partnering institutions, in which case an inter-institutional agreement would be required. This would be guided by the *Policy Framework for the Internationalisation of Higher Education in South Africa* which has recently been adopted in South Africa. Commonly, for a single student, a cotutelle agreement should be in place which specifies the contributions of the student, the supervisors and the institutions, and the student receives a degree certificate which names both institutions.

In cases where a shared doctoral training programme involves more than one student, and where there may be reciprocal mobility and supervisory or peer-group interactions, the institutions involved usually have an overarching agreement, and students receive their degrees from their home institution.

The SERs and Review Panel Reports indicated that the practices of joint or shared degrees are highly variable across the university sector, with some institutions having well-established processes and arrangements, while some smaller and newer institutions have fewer and less established processes in place.

Recommendations

- With the introduction of a national framework for internationalisation of higher education, all institutions should have clear policies on recognition of international qualifications and mechanisms for collaboration and supervision in the context of international partnerships.
- It is important that the inter-institutional arrangements for joint degrees should be in the interests of the student, providing additional research opportunities and academic value to the student, as well as enhancing the capacity of the institutions involved in the partnership.

vii) Measures for security of Doctoral certification

The responsibility for ensuring security of Doctoral certification normally rests with the centralised administrative office/ department responsible for graduation arrangements. The majority of institutions indicated that they have sufficiently strict measures and controls in place to ensure the security of doctoral certification.

7.5 Other areas requiring attention

7.5.1 Time to completion

Many SERs and Review Panel Reports noted that the time taken for doctoral students to complete their degrees is a matter of great concern. The registration data from most institutions indicate that the number of students who complete their doctoral studies within the minimum period of two years is extremely small. Far more common is for those students who actually complete their studies to do so in a considerably longer time period. This can range from three years to six years and even longer, according to the SERs.

It is recognised that the average time for doctoral students to graduate in a particular year is a determining factor in the calculation of the subsidy formula for the size of the annual Teaching Input Sub-Block grant allocated to an institution. There is therefore some financial benefit for the institution to have doctoral students complete their theses and graduate within a reasonable time period. However, it should be noted that financial incentives should not be the motivating reason for enrolling doctoral students. In fact, the income from subsidies is unlikely to cover the resources required for doctoral programmes, and additional resources are likely to be required (see Section 5).

There are additional benefits to the timeous completion of doctoral degrees, in relation to the use of facilities which may be needed for other (newer) students, and availability of supervisors whose time is taken up with students who are not completing in time.

In an effort to encourage completion, most (but not all) institutions have placed a limit on the maximum number of years allowed for doctoral studies. (In all cases it would appear that once the limit has been reached, permission to register for a further year or more requires the formal approval of some university committee.) Many institutions also build in financial penalties for those students who do not complete within a specified time period. These maximum time limits for doctoral studies vary from institution to institution: it can be as short as four years for some institutions, while for others it may be as long as six years for full-time studies (and seven years for part-time studies). In the case of a few institutions, while there is no rule with regards to a maximum time period, it is clearly stated that the progress of each student is carefully monitored.

Institutional SERs have suggested the following as some of the contributing factors that may cause students to take longer than expected to complete (see also relevant sub-sections in Sections 7.2 - 7.4 above):

- financial support: in most cases the financial support that a student receives (in the form of a bursary) is for a period of three years (and as an exception, perhaps four years). When the support runs out and the student has not yet

completed, the student is often forced to take up part-time (or even full-time) employment, which in turn results in even further delays before completion;
- the process that needs to be followed in order to obtain formal ethical clearance for a research project is often drawn-out and not well understood by students;
- statistical and editorial support is often perceived to be inadequate and inaccessible (as it is not available at the faculty level);
- the lack of dedicated laboratory technicians to maintain key research equipment in experimental disciplines can cause delays for a student;
- the university procurement system is in some cases inefficient, causing prolonged delays in accessing facilities and funding; and
- the rule at some institutions that requires a student to have completed a manuscript before being allowed to submit the thesis, reportedly delays students from timeous completion.

Delays in completion can sometimes cause frustration on the part of the supervisor who may lose interest in the student and subtly withdraw from providing appropriate guidance and supervision. Furthermore, delays in completion can also cause "hot" research topics to go stale. What was current and topical five years before may no longer be novel in the eyes of the supervisor, or the examiner, to the potential detriment of the student.

A further issue influencing graduation (and dropout) rates is the fact that many doctoral students find it necessary to work part-time for financial and personal reasons, and this leads to prolonged registration times. Of relevance is that there is no national (DHET) distinction between part-time and full-time doctoral students' registration. This means that there is no acknowledgement of the effect on completion time for part-time students as compared with full-time students. In many universities, all doctoral candidates are by default registered as full-time students, with the consequences of impact on recorded completion times and subsidies. (A recommendation in this regard is made in Section 11.2.)

The above discussion is relevant with regard to students who actually complete their doctoral studies (and contribute to the graduation rates). The discussion is also relevant with regard to those who drop out before completion. The large number of students who drop out before completion is of great concern. Data gathered from one of our larger institutions indicate that for a particular cohort of doctoral students who first registered in 2014, 19% dropped out within five years. For the same five-year period, another institution recorded a nominally higher dropout rate of 22%. While the percentage dropout rate fluctuates from year to year, it is nonetheless a high percentage, which is of concern.

Considering that doctoral students are senior students who have already successfully completed earlier qualifications, institutions need to consider the possible reasons for the dropout rates. These reasons are likely to be varied. One may question, for example, whether the formal admissions criteria are adequate. These admissions criteria generally require a completed Master's degree with a pass mark of at least 60% (or 65%, depending on the institution) (See section 7.1.2 above). However, (as noted previously), a Master's degree does not necessarily prepare a student for doctoral studies. Bearing in mind the financial incentives for institutions to increase their doctoral numbers, it is possible that some registered doctoral students should not have been accepted into a doctoral programme in the first place, as they are underprepared (see section 7.1.2 above) and may need additional support and assistance from their supervisors.

Recommendations

- In order to reduce the drop-out rates for a doctoral programme, institutions need to ensure that doctoral applicants understand the full implications of committing to doctoral studies. Having an acceptable pass mark for the Master's degree does not in itself guarantee a successful doctoral study. It should be made clear that undertaking a successful doctoral project at NQF level 10 is very different from having already completed a Master's project (at NQF level 9), and a doctoral project is not simply a second Master's project although this may be the perception in the minds of some students.

- Consequently, the support provided to the student by the institution needs to start at the initial enquiry (i.e., even before admissions), by ensuring that the applicant fully appreciates the scale of the decision to enrol for doctoral studies. This same commitment from the institution to supporting the student needs to continue through the life of the project, to graduation.
- In summary, institutions need to ensure that they have strategies and policies that include careful selection of doctoral students, implementation of supervisor-student agreements, monitoring of student progress, provision of adequate supervision, mentoring and supporting of supervisors, and appropriate management of quality before submission of theses for assessment.

7.5.2 Issues for international students and internationalisation

The section above *(Policy on inter-institutional agreements and award of joint degrees)* describes policy matters for internationally-shared doctoral degrees.

Many universities have described their internationalisation strategies, which involve encouraging international students to join their institutions. However, for international doctoral students who register at South African universities, there are additional requirements and conditions that can impact negatively on the student experience and success rates.

International students frequently encounter requirements that delay their registration at South African universities. They require accreditation of their previous qualifications by the South African Qualifications Authority (SAQA), before they can register, a process which in many cases can be protracted, delaying the student's start to their doctoral study. Similarly, there are, in many cases, delays in receiving study permits and/or visas. These delays lead to frustration and difficulties for international students, often contributing to longer times to reach completion.

Funding is also a critical issue for international students, since they are often not eligible for bursary programmes that are available nationally and institutionally. Some universities provide special bursaries for selected international students, but many Panel Reports show that international students have severe financial constraints, leading to considerable personal pressure, which can impact on the quality of their studies. In addition, international students are usually required to show that they have financial means, in order to apply for a study visa, but it is apparent that this is not adequately checked in all cases.

7.5.3 Awareness and articulation of the contribution made by the work beyond the original research

The National Standards and Reviews Committee of the CHE (in its identification of issues arising from this review process) highlighted the question of whether doctoral graduates develop sufficient awareness of the contribution, or potential contribution, that their research can make beyond the demonstration of originality. Many doctoral research projects are, in effect, part of broader research programmes which have significant national or international relevance and application. Furthermore, it is part of the national agenda to develop the knowledge economy and to generate greater numbers of doctoral graduates for the benefit of national and global social and economic priorities.

Only a few SERs and Panel Review Reports included comment on the application and value to society of the research completed by doctoral graduates. However, several institutions do have established innovation and commercialisation activities and, where doctoral studies result in valuable intellectual property, it can be protected; in such cases, students would be included as co-inventors.

Related to the contribution of doctoral work beyond the original work is the concept of engaged research and community outreach. A small number of universities did refer to their programmes in this regard where doctoral students are encouraged and supported to demonstrate the broader benefits of their research.

Section 8

ABOVE-THRESHOLD PRACTICE AND AREAS FOR IMPROVEMENT

8.1 Above-threshold practice

The Standard statement is a *threshold* statement that establishes minimum criteria for the awarding of the doctoral qualification - irrespective of the variant. Above-threshold practices need to be seen against the background of the purpose of studies towards the doctoral degree, which is intended 'to develop the highest level of holistic and systematic understanding of scholarship in, and stewardship of, a field of study through an original contribution that advances the frontiers of knowledge. In relevant cases the contribution may, in so doing, advance the frontiers of professional practice and/or creative activity.' Therefore, areas considered to be above-threshold practice should be activities and/or processes undoubtedly above basic requirements, exceptional, innovative and not commonly in practice elsewhere in the sector.

This section discusses aspects of doctoral studies which institutions identified as above threshold. The views of Review Panels and the Writing Team with regards to whether the aspects are above threshold, good and commendable practice or simply threshold are also discussed.

The above-threshold practices, as identified by Review Panels and presented in the Review Reports, are discussed as follows: Sections 8.1.1 to 8.1.3 focus on those relating directly to the doctorate qualifications, while Sections 8.1.4 to 8.1.7 focus on those relating more to quality assurance for doctoral degrees, in the context of institutional conditions.

8.1.1 Equity Imperatives as Above-Threshold areas

The Review Reports noted that some institutions identified the addressing of equity imperatives, including i) increased and broadened participation to "accommodate a larger and more diverse student population"; and (ii) responsiveness to societal interests and needs in terms of knowledge and human resource development, as above-threshold practice.

The general consensus is that addressing and/or working towards meeting equity imperatives should not be construed as above-threshold, but rather as an expected response from all institutions, given their legislated responsibility to implement these imperatives. Equity imperatives (and transformation in general) are issues that have been repeatedly debated and advocated in various higher education documents and policies since 1994.

8.1.2 The quality of the doctoral graduate at exit level

Peer review publication and conference participation

The Standard requires institutions to have in place policies on any additional requirements over and above the submission of research work in the thesis, such as peer-reviewed publication(s).

Institutional claims varied as to whether the publication of doctoral research work constitutes above-threshold practice. Some institutions are of the view that their policies relating to outputs as products of the doctoral research work represent doctoral training requirements that do exceed the threshold. Instances identified by institutions as exceeding the threshold are:

- Cases where peer-reviewed articles, conference presentations and published proceedings, published by doctoral students, are recognised by the institution as an above-threshold area, on the basis that these enhance the quality of the doctoral qualification and contribute to the research performance of the institution;

- Cases where a doctoral student publishes more articles in DHET-accredited journals than required by the institution's regulation for completion of the doctoral degree, and publishes in high-impact journals, possibly with several citations resulting from the publication;

- Cases where publication by individual students is itself considered an above-threshold practice because such publication is the result of institutional support structures that are in place, and resources provided to ensure the publication of the research work.

Efficiencies in processes, turnaround and timeframes

There was some variability in views on whether efficiencies in processes and turnaround time frames represent above-threshold practices. These processes were considered to be above threshold in some reports, while in others they were regarded as baseline conditions that should be expected from institutions offering doctoral studies. These baseline conditions and processes may include: short administrative turnaround time frames; completion of doctoral studies within the expected standard period, and (ideally) zero dropout rate for doctoral students; investment in quality supervisor-student relationships (as confirmed by both supervisors and students); effective and continued communication between supervisors and students; and comprehensive and effective selection processes, closely integrated with a proposal development process for each student. We suggest that these efficiencies should be considered as appropriate good practice, but not above-threshold practice.

Monitoring of Student Progression

Review Panel Reports varied on whether detailed institutional policies, processes, mechanisms and practices on managing the monitoring and tracking of the progress of doctoral students does exceed the threshold. While this was suggested to be above threshold in some reports, monitoring student progression would generally be seen as a necessary practice in doctoral training and to be expected across the HEI sector.

Institutional development initiatives

The Review Panel Reports varied on whether high quality training and support offered for inexperienced supervisors, such as those funded by the Thuthuka programme of the NRF and the New Generation of Academics Programmes (nGAP) of the DHET, constitutes above-threshold practice. While some reports suggested that these initiatives are above threshold, it is argued that using the available resources, in the form of capacity development programmes offered in the higher education sector, is an expectation that all institutions should take advantage of to strengthen their capacity in the country.

8.1.3 Oral presentation as an assessment tool

The Review Panel Reports varied on whether inclusion of an oral presentation (oral defence) in the assessment of the doctoral degree is an above-threshold practice. It was claimed by several institutions that requirement for the oral presentation is an above-threshold practice because it is seen to be an additional element, not specifically mentioned by the Standard. However, the more generally-held view is that the oral presentation should be considered as one of several assessment tools that may be, and is, used to gauge the candidate's attainment of required academic independence at the doctoral level. (This is considered different from the student being afforded the opportunity to give an oral presentation around the time of thesis submission, which is often viewed more as a 'rite of passage' by the institution.)

We suggest that what could qualify as above-threshold practice would be a full range of assessment tasks put in place by an institution to allow the full range of graduate attributes to be assessed.

8.1.4 The quality of the doctoral candidates at entry level

The Standard states that the nodes in the doctoral cycle at which quality can be judged include the quality of the candidate at entry level. This is commonly dealt with by means of screening and selection processes, and also pre-registration preparedness programmes. The Review Reports concurred with the views of some institutions that rigorous processes for evaluating the quality of the doctoral candidates at entry level constitutes above-threshold practice. The information provided in the SERs and the Review Panel Reports demonstrates that there is very wide variation between different institutions, as might be expected given the varying contexts of these institutions, in the processes and conditions for admission and registration of doctoral students.

Thus, pre-registration (also called pre-doctoral) preparedness programmes that many institutions provide, are generally considered to be above-threshold practice. Such programmes provide a further means of assessing the preparedness of the doctoral candidate at entry level and also an opportunity for the candidates to assess for themselves whether or not doctoral study is for them.

8.1.5 Insight into the interconnectedness of topic of research with other cognate fields

The requirement that students should demonstrate *'insight into the interconnectedness of the topic of research with other cognate fields'* is one of the knowledge attributes expected of doctoral students by the Standard.

Review Panels supported some institutions' view that an activity such as a Post-graduate Student Conference is a vehicle for facilitating the immersion of an individual doctoral research endeavour into a broader intellectual space of cognate fields, and therefore could constitute an above-threshold practice.

The general consensus is that a deliberate drive to promote interconnectivity across different theoretical positions amongst cognate groups, and the appointment of supervisors drawn from different fields and faculties to ensure their unique contributions, does indeed constitute an above-threshold practice.

8.1.6 Contexts and institutional conditions

In Section 4, this Report provided a short account of the context and environment within which South Africa's HEIs (both public and private), that offer the doctoral qualification, have operated over the years. It was evident that the different contexts affect institutions differently. This sub-section provides specific details of contexts of institutions as they relate to above-threshold practices and/or structures.

Technological support platforms

The development of various online management systems such as graduate research management tools, research data management systems and online digital platforms for higher degree management and oversight, were proposed as being above threshold in some reports.

While other reports suggested that these management tools would be expected to be found at any institution offering doctoral qualifications, the reality is that not all institutions have the capacity to develop such technical platforms. It is generally agreed that they do greatly improve the efficiency of doctoral programme management, and therefore do constitute above-threshold practice.

Co-badged qualifications and international supervisors

There is general agreement that the use of international supervisors and the offering of co-badged qualifications (supported by the necessary oversight structures) represent above-threshold practices. It was argued that these enhance the international recognition of the qualification and support institutional and national objectives on internationalisation and student mobility. Provided that an effective oversight structure is in place to deal with all matters relating to co-badged doctorates, this is recognised as above-threshold practice.

Institutional structures for capacity development

There was general consensus that institutional structures put in place to support and facilitate capacity development of students (during the course of the doctoral journey) could be considered as above-threshold practice. Institutional support structures included, amongst others, well-functioning Centres for Higher Education Development; Offices for Graduate Studies; Centres for Higher and Adult Education; and Writing Centres for doctoral students (to name a few examples). These structures provide and manage various capacity development interventions that include workshops on specific content and skills; support for drafting of the thesis; in addition to services traditionally provided by libraries and information services, such as scaffolding the use of sources, identifying appropriate and knowledgeable sources, referencing methods and paraphrasing with correct citations.

It is generally agreed that the establishment of doctoral capacity development structures is an above-threshold practice because these structures provide additional necessary support beyond academic supervision and mentoring for doctoral candidates throughout their doctoral journey.

Recommendation

It is recommended that a well-resourced and dedicated centre (or similar structure) to support the academic and intellectual development of all doctoral students, should be established in all institutions (if not already in place).

Models of supervision, supervision load and student autonomy

The use of models for supervision other than, or in addition to, the traditional one-on-one supervisor-student model, such as a cohort model, was suggested as an above-threshold practice by some institutions. Such models may be associated with co-supervision, promoting the value of inter-faculty co-supervision, and supporting interdisciplinary research. It is argued that these models of supervision, which explore a range of formats, provide opportunities for the creation of shared collaborative communities to activate the agenda of team approaches to learning and teaching, and to enhance the quality of supervision. The view that such approaches are above threshold, is generally supported.

While some Review Reports supported the view that the use of supervision workload models is an above-threshold practice, a more general view is that managing supervisory workloads is a way of ensuring that supervisors are not overloaded, which is commendable, and should be an expected practice.

Student Counselling

There was general consensus that provision of a highly efficient centralised counselling unit with qualified staff, catering also for doctoral students, could be considered an above-threshold practice. This is because institutions tend to attribute students' lack of progress to academic aspects only and overlook the current social, psychological and economic conditions affecting students enrolled for doctoral programmes.

8.1.7 Institutional type context

Varied views emerged on whether an institutional approach of focussing research in contextually-prioritised niche areas, thereby developing innovative solutions with transformative potential, applied to critical, contemporary and real problems in society, could represent an above-threshold practice. It may be considered that such approaches do constitute above-threshold practice in that they make an original contribution to relevant fields of study, by developing and customising solutions to the South African, African and developing-country contexts. An alternative view is that this approach is simply good practice, whereby institutions are supporting research within their particular context and in accordance with their vision and mission. Overall, the focussing of doctoral research in areas considered to be niche or priority areas, particularly where there is specific expertise or resourcing, is considered good, rather than above-threshold, practice.

8.1.8 Decolonisation narrative

Some institutions claimed that their doctoral study programmes are unique in that they advance the decolonisation process through recognition of and commitment to more locally-constructed knowledge (in response to the current goal of decolonisation of knowledge narratives) and that this therefore could qualify as above-threshold practice. The Review Panels agreed that this could be considered above threshold, as this has not been highlighted by the majority of institutions, as many institutions have not considered this to date.

8.1.9 Public good and private benefit aspects of doctoral research

A few Review Panel Reports agreed with institutions that a conscious decision to ensure that doctoral studies reflect both the public good, and private (commercial) benefit, constitutes an above-threshold practice. It was suggested that this reflects the purpose of higher education in advancing a student's private or personal needs such as gaining employment in the public or private sector, as well as recognising the potential public good of a doctorate. This is generally considered as a good practice that is recommended for all institutions.

There is also a general consensus that pressure to commercialise the research in a doctoral study should not outweigh the goal of an original contribution to knowledge and the attainment of the graduate attributes for a doctoral degree.

8.1.10 Quality of Student at Exit Level

A few institutions presented a list of notable alumni that attested to the quality of their doctoral graduates at exit level, citing the example that some graduates have also been accepted at other institutions for post-doctoral fellowships, as evidence of having exceeded the threshold. The Review Panels, however, expressed difficulty in gauging the statistical representation of such alumni among all the graduates of the doctoral programmes at those institutions. Our general view is that the achievements of individual doctoral graduates from a particular institution cannot be viewed as evidence of above-threshold practice for that institution.

8.1.11 Closing comments

It is recommended that institutions must clearly differentiate and separate *achieving* the threshold as per the Standard and *exceeding* it. In many cases, institutions tended to casually construe even those standard practices, conditions and national policy requirements as constituting above-threshold practice.

8.2 Areas for Improvement

Institutions were required to describe areas or aspects of their doctoral qualifications that they identified as needing improvement. Institutions were further required to submit improvement plans (with time frames) for addressing the identified areas of improvement.

This sub-section presents areas needing improvement as identified by institutions in their SERs and reported in the Review Panel Reports. Additional areas needing improvement, identified and inferred by the Writing Team from the SERs and Review Reports, are also provided. This sub-section should be read in conjunction with Section 10 (where the Writing Team's concerns are summarised) and Section 11 (which includes a summary of our recommendations). As would be expected, the level and intensity of the process of improvement required for each identified area will vary from institution to institution based, in part, on their contexts.

The areas needing improvement can be categorised in two broad groups. The first category has to do with graduate attributes, contexts and conditions for supervision and assessment of a doctoral qualification (including institutional conditions, progress and review, submission, coursework, and work-integrated learning). The second has to do with quality assurance and relates mostly to institutional contexts and conditions. Some of the issues discussed below may have already, in sections 6 and 7 above, been raised, problematised and commented on with recommendations. They are presented here in summary to highlight what needs improvement.

8.2.1 Graduate Attributes

The most significant areas that need improvement regarding graduate attributes, as identified by Review Panels and SERs, are as follows: institutional awareness campaigns and strategies to familiarise supervisors, potential supervisors, examiners and students with the graduate attributes as formulated in the Standard; ensuring that graduate attributes and skills are a direct and deliberate part of the postgraduate research and assessment process; monitoring tools to ensure that graduate attributes are implemented and assessed; and, implementation of all graduate attributes in the doctoral studies.

Additional areas identified by the Writing Team

- Improvement of awareness and understanding, for all academic and administrative staff involved in doctoral training, that students will attain the attributes at different times because of their unique dispositions, their backgrounds and experiences; and

- The need for institutions, that have not already done so, to provide a clear description of assessment criteria and assessment tasks that students will undertake to demonstrate the attainment of attributes.

8.2.2 Submission and Approval

The Review Panels agreed with many institutions that identified policies and procedures for the submission and approval of theses as areas that need improvement. However, the required improvements vary across the sector where these aspects need to be put in place, and some further improvements (including updates to policies) may be required where these already exist.

8.2.3 Selection of doctoral candidates at entry level

The extent to which the selection of doctoral candidates at entry level needs to be improved varies from institution to institution. There are a few institutions with neither policies nor clear procedures on how students are selected, while, for some other institutions, the selection processes exist but are not applied consistently.

Review Panels revealed that a minority of institutions recognised provisional admission, assessment and acceptance of the research proposal, as well as the approval of the research design and methodology, as areas requiring improvement. We recommend that, where such procedures are lacking, or inadequate, attention to this matter should be a priority.

8.2.4 On-boarding, orientation and induction

The processes of on-boarding and pre-registration were highlighted as areas needing improvement by some institutions. The relevant Review Panel Reports observed that while on-boarding, orientation and induction of students into a doctoral programme exist in some institutions, other institutions do not have these interventions. Some Reports raised concerns with regards to a few institutions (and in some cases, faculties within the same institution) that treat the attendance of on-boarding, orientation and induction activities as optional and/or informal, resulting in poor attendance. Another concern reported in some Review Reports is that many students are not taking up the skills development opportunities provided by institutions and faculties. It is clear that there is room for improvement with respect to on-boarding, orientation and induction of doctoral students, even in institutions where these practices are already in place.

8.2.5 Provision of supervision

Induction of supervisors

Significant variations exist with respect to the induction practices that are offered to new supervisors at many institutions, as well as among faculties, schools and departments within the same institution. The identified variations ranged from complete absence of induction, to cases where some form of induction exists in some faculties but is not implemented across an institution. This is considered a serious deficiency for any institution offering doctoral qualifications and requires attention.

Monitoring and managing of supervisory load

The general consensus is that the monitoring and managing of supervisory workloads is an area requiring improvement across the whole sector. However, as the specificities will vary from institution to institution, this needs to be addressed by each institution, taking all relevant factors into account.

On-going developmental role for experienced and emerging supervisors

The Standard requires the provision for a developmental role for new/emerging supervisors, in the form of co-supervision under guidance from experienced supervisors. While Review Reports concurred with some institutions about the need to improve ongoing development of experienced and emerging supervisors, the absence of coherent and streamlined policies to guide the development of emerging supervisors points to the need for improvement in those institutions where this is inadequate.

Supervision models

The overall lack of policy for and application of robust supervisory models have been underlined by the Review Panels Reports as an area that needs improvement. In particular, a growing international trend in doctoral studies to explore alternative models of supervision and programme delivery as a formal part of designing doctoral education is generally underdeveloped in most institutions in South Africa. This would be particularly important in the event that greater use is made of the Professional doctoral variant, where supervision of research would be accompanied by suitably-related coursework.

Recommendation

Institutional plans should be designed to address the need for ongoing improvements with regards to the provision of supervisors, the monitoring and managing of supervisory loads, the induction of supervisors, the on-going developmental training for experienced and emerging supervisors, and supervision models.

8.2.6 Supervisor and student MoU

The Review Panels identified the general lack of policy regulating the roles, responsibilities and obligations of supervisors and students as an area requiring improvement. Institutional responses varied as to whether or not the MoU (or MoA) should be mandatory across an institution and faculty. Institutional consistency in implementing the MoU/MoA needs to be addressed.

8.2.7 Monitoring and tracking of progress of doctoral candidates

The Standard requires policies and procedures to be in place to monitor progression in doctoral studies, including formal progression procedures to check the level of knowledge and skills, and informal discussions with the candidate's supervisor.

Review Reports revealed that institutional responses on monitoring and tracking of progress of doctoral candidates, while varied, highlight an area generally requiring improvement across the sector. The variations include lack of formalising the processes for the monitoring and tracking of students' progress, as well as inconsistent application of policies across institutions where they exist. An oversight role by an adequately senior body is required, to ensure that student progress is properly monitored and managed.

In some institutions, while monitoring and tracking of the progress of doctoral candidates has been happening, it has often been in a haphazard fashion. Many aspects of this require improvement. Institutions clearly need to design plans to improve obvious gaps in the different aspects of monitoring and tracking of students.

8.2.8 Student academic support and development

Review Panels and SERs highlighted the provision of student support as an area that requires improvement in many cases. However, the extent of the improvements required varies across the sector. Student support is either lacking (or inadequate) in some institutions, or less formalised and optional in other institutions. In many institutions, counselling and advisory services for doctoral students are clearly inadequate, or not sufficiently visible.

In some cases, Panel Reports indicated that many students find themselves with personal problems (e.g., financial, family, accommodation, access to campus). This seems to be particularly severe for international students and for those whose homes are far from the institution. Moreover, mentoring programmes for doctoral students (in addition to formal supervision) were not mentioned in many Reports, and it seems that few institutions regard the provision of mentorship as a high priority.

Recommendation

- The Writing Team identifies as an area requiring improvement the neglect of students' specific personal circumstances of gendered, classed and family commitments which require a work-life balance mediation in negotiating their doctoral studies.
- Ongoing academic support for doctoral students to facilitate the attainment of the attributes throughout their studies is a commendable good practice which institutions are encouraged to consider.

8.2.9 Time of completion, retention/dropout and throughput rates

The majority of the Review Panels and SERs noted that time-to-completion, retention, drop-out and throughput rates of doctoral students are national issues that require improvement across the sector. Further, it was noted with concern that when such data are considered by institutions, in many cases the students' progress is assessed with the sole purpose of excluding students, and that progress reports are often required for administrative purposes rather than as developmental foci.

The need to improve student retention and throughput rates remains a matter of national importance.

Section 9

EXAMPLES OF GOOD PRACTICE

From our study of all 28 SERs and Review Panel Reports, we as the Writing Team found numerous examples of good practice, all of which provide assurance of the commitment and dedication of many individuals (including supervisors, support staff and top management) who are collectively responsible for the doctoral qualifications being offered at South African higher educational institutions. From these many examples, we have showcased the following as striking examples of good practice that are worth emulating by any institution that is offering doctoral qualifications. Some of these practices have already been identified in Section 8.1 as 'above-threshold' but are repeated below for completeness. Together with the other examples mentioned in section 7 and those listed below, these practices are expected to enhance the quality of any doctoral qualification being offered by an institution.

Institutions

1. Encompassing critical citizenry and consciousness of social responsibility, that seek benefit out of the research for any community or social group that was the subject of the research (as envisaged by the Preamble of the Standard), is a commendable good practice.

2. Defining doctoral research topics in the various fields, which take cognisance of local/community and regional issues as appropriate, is good practice and encouraged.

3. The provision of adequate infrastructure such as laboratories, specialised equipment and technological platforms is absolutely essential and therefore strongly encouraged for those institutions offering doctoral qualifications in disciplinary fields requiring such facilities. See also point (6) below.

4. Building equity imperatives, including enrolling students from diverse backgrounds and marginalised groups, and increasing supervisory staff from these groups, is good practice.

5. Recruitment and admission of international students, recognising the benefit to be gained from the increased diversity of the doctoral cohort, is a good practice (provided that this does not result in the need to decline any applications from eligible local students).

6. International partnerships such as bilaterals offer many benefits for participating institutions (including the offering of joint degrees, the opportunity for increased mobility and availability of unique scientific equipment), all of which provide immense benefit to the doctoral students involved.

7. Institutions should have recognised research niche areas that are used to attract prospective doctoral students to their institutions.

Central Administration

8. A successful doctoral qualification at an institution will be supported by the relevant (and up to date) policies, systems and processes which are applied consistently across each faculty and which provide an efficient administrative support base to ensure a successful doctoral journey for each student.

9. Having an online monitoring and tracking system in place to ensure proper monitoring and reporting of progress of each doctoral student is good practice that should be in place at every institution.

10. Each institution should have a formally established and well-functioning Higher Degrees Committee (or equivalent name), which is often structured as a sub-committee of the Senate. Its role is to deal specifically with matters pertaining to doctoral students, including appeals, policy formulation and updates, etc.

11. Ethical awareness and responsibility in research and professional conduct should be built into the training of every doctoral student, irrespective of the extent to which the doctoral project requires formal ethical approval.

12. Appropriate training, mentoring and supervision should be embedded in the full term of the doctoral journey to ensure that growing evidence of all the doctoral graduate attributes is manifest in the doctoral student. Further, the institution must recognise the intentional distinction between *knowledge* and *skills* attributes as set out in the Standard, and in the context of different fields of specialisation.

13. Assessment of the attainment of graduate attributes (including the principles of ethics and integrity) should be included in the assessment guidelines accompanying the thesis for examination.

14. Institutions should have adequately-staffed student counselling in place, focusing on various cohorts of doctoral students, including international students, etc., given the different challenges each group may face.

15. The institution should have a dedicated Postgraduate Centre to support the needs of all of its doctoral students. Activities will include providing pre-registration support, the organisation of workshops, providing information about bursary opportunities, etc. (see Section 7.6).

16. Institutional communication with examiners must at all times be very clear, from the start of the examination process, to avoid reputational risk or confusion (see Section 7.4.2).

17. Software that is designed to detect plagiarism in a thesis should be used as standard practice to check the thesis prior to submission for examination (see Section 7.4.1).

Supervisors and Faculties

18. Communities of Practice (CoPs) are seen as excellent ways for doctoral students to acquire intra- as well as multi-disciplinary skills and knowledge, often physically located in an appropriate quiet and secure space (perhaps in a Research 'Commons') that provides an excellent environment for deep reflection and self-study.

19. Supervisors should attend regular ethics training awareness workshops to improve their assessments of ethical issues in research, since this is a risk management imperative.

20. Programmes that are specially tailored to assist supervisors strengthen their supervisory and mentoring skills should be offered on a regular basis.

21. The need for supervisors to remain up to date with respect to the innovations in their disciplines, and/or methodologies drawn from a range of interdisciplinary units, should be recognised and encouraged by the institution.

22. Seminars and colloquia that provide opportunities for rigorous debate, should be regularly held in departments (or across faculties), with doctoral students always in attendance and willing to present.

23. A compulsory on-boarding training workshop for all newly-registered doctoral students should be in place, to assist new doctoral students in the first few months of their doctoral studies.

24. A clearly-developed process for guiding a doctoral student in preparing the research proposal (and a description of the entities involved in this process) is a good practice that should be in place, recognising that this will also help to inform the supervisor with regards to the student's ability at the conceptualisation stage of the doctoral journey.

25. The originality of a student's doctoral project will depend on the structure, nature of knowledge, and specialisation in a particular field or discipline.

26. A student's adaptive expertise should be nurtured to encompass the ability to apply knowledge and skills in a range of contextual and conceptual frameworks, and the ability to anticipate and accommodate change, ambiguity and differing views.

27. Interdisciplinary and multidisciplinary projects are considered good practice and should be encouraged (where appropriate), provided that doctoral students are afforded the opportunity of developing critical and independent scholarship in a field of specialisation.

28. The oral defence of the thesis is a good practice that should be encouraged, knowing that it can take place in various formats; e.g., an internal seminar presented by the student in the final year, or a public presentation to which the external examiners are invited, etc.

29. Students should be made fully aware of integrity issues in research (including unethical practices such as plagiarism and publishing in predatory journals) and how to displace them.

30. Students should be encouraged to seek to publish their research findings in reputable academic journals during their doctoral journey without unduly compromising either the integrity or time-to-completion of the thesis.

Section 10

SUMMARY OF SIGNIFICANT CONCERNS

An analysis of the SERs from the 28 institutions and accompanying Review Panel Reports revealed numerous concerns that have already been emphasised in various sections of this Report. In this Section, the more significant concerns are summarised again for completeness and quick reference, in the hope that where relevant, these concerns will be satisfactorily addressed and will also pose as lessons for other institutions.

The concerns listed below have some bearing on the doctoral qualifications being offered at several institutions. In other words, this section does not focus on isolated concerns that are applicable to only one or perhaps two institutions. Not all concerns pertain to all institutions (although it would be considered prudent for all institutions to take note of these concerns and, where relevant, adapt accordingly). In some cases a concern may be considered critical to an institution's ability to offer a quality doctoral qualification and consequently may require more urgent interventions.

The views expressed below are ours as the Writing Team.

1. Policies and procedures relevant for doctoral studies are not all in place, and in many instances are not up to date. These include, amongst others, policies on recruitment, admissions, RPL, annual progress, ethics, assessment, doctoral work submissions, etc. While also referred to in Sections 4 and 6, Section 7 addresses many of these issues regarding policies and procedures.

2. With regard to the application of policies and the implementation of systems and procedures, there are varying levels of awareness of their existence among the key stakeholders (such as supervisors) and, in some institutions, a lack of consistency and transparency in the practices of faculties and/or departments in the same institution.

3. Section 7.2.3 pointed out the clear benefits of an MoU between the supervisor and student, as well as the significant disadvantages (both to the student as well as the institution) should an MoU not be in place. A key concern is that in a number of institutions the MoU is not applied consistently across departments and faculties, and in some institutions is totally absent. Further, it is not always clearly spelled out what the consequences may be for those who disregard the MoU.

4. There is a general lack of awareness and understanding of the doctoral graduate attributes amongst students, academics and institutional support staff, and how the attainment of graduate attributes is monitored and measured during as well as at the end of the doctoral journey of a student. (See Sections 6.2 and 8.2.1).

5. In some cases an erroneous impression is created that the graduate attributes refer to generic attributes characteristic of all qualifications, rather than to the doctoral degree specifically.

6. At some institutions (and in some faculties/departments within an institution), there is little or no monitoring in place to formally track the progress of a doctoral student and identify those who are not making suitable progress. (See Section 7.3.1).

7. Inadequate (and sometimes absent) training opportunities for new supervisors/ co-supervisors inevitably impacts on the progress of the doctoral student. (See Sections 7.2.1 and 8.2.5).

8. The lack of adequate student (and supervisor) training in the ethics processes and research integrity required for the research project at doctoral level is of great concern and is potentially a massive reputational risk for any institution. Related to this is the concern about the lack of ethical monitoring and compliance at various levels, once the formal approval has been granted and the project is underway. (See Section 7.1.5).

9. The acceptance of under-prepared students into a doctoral programme (through impaired, non-transparent and generally inadequate selection processes) is an area that should be of concern for many institutions (see Section 7.1.2). Furthermore, there is a lack of programmes and measures to support the development of doctoral students during their studies.

10. It is of great concern (and considerable risk) that some institutions insist on the requirement that the complete doctoral proposal must be approved *before* registration of the student. (See Section 7.1.3).

11. It is noted with concern that students are sometimes accepted into doctoral programmes in various disciplines (including, in many cases, the humanities and social sciences) without the academic department and/or faculty having the necessary funding available to cover the anticipated running expenses for the study. (See Section 5.3).

12. The absence in many institutions of a formally established and well-functioning Higher Degrees Committee (or equivalent name) is a major concern, given that the doctorate is an institution's apex qualification, and carries the expectation of international recognition. (See Section 7.4.2).

Section 11

CONCLUSIONS AND RECOMMENDATIONS

11.1 Concluding Statements

As mentioned in Section 1, this Report has set out to summarise the key findings of the reviews conducted during 2020 - 2021 at each of the 28 higher education institutions that offer the doctoral qualification in South Africa. From the key findings, it was anticipated that, as an outcome, it would be possible to obtain some indication regarding the extent to which the many doctoral qualifications being offered by the institutions meet the Doctoral Standard of the CHE.

It is recognised that South African institutions are at different stages of complying with the Standard. From the outset, the focus for this Report was therefore not going to be about individual institutions, or some of the programmes offered by an institution, which may (or may not) have met the Standard. Rather, this Report was aimed at providing the reader with a sense of the doctoral programmes in South Africa *as a whole*. This, of course, will have taken cognisance of the fact (as reflected in Section 2) that the Standard statement is a *threshold* statement that establishes minimum criteria for the awarding of the doctoral qualification - *irrespective of the variant* and in spite of the differences in institutional typologies, sizes, histories, cultures, trajectories and other differentiating factors. In other words, the Standard has to be uniformly applied across the entire national higher education system.

What was required, in order to extract the relevant information, was an analysis of the 28 Review Panel Reports – one for each institution – *as well as* the need to delve deeply into the Self-Evaluation Reports (with accompanying addenda containing relevant data) for each institution. By any measure, this has been a massive undertaking, given the diverse nature of the institutions.

This exercise has also been important from the point of view of the international expectation of the doctoral qualifications offered in South Africa. As stated in the Standard, the doctorate is globally recognised as the apex qualification and is in principle therefore also the most internationally transferable qualification. Further, South Africa's doctorates are commonly regarded as equivalent to those produced anywhere.

The outcome of this exercise has been the following:

1. It is our considered view, as the Writing Team, that, while the majority of higher education institutions in South Africa offer doctoral qualifications that meet the Standard, there are a number of institutions currently offering doctoral qualifications that do not meet the threshold of the Standard; and

2. Based on what the Standard requires, it is also our view that those doctoral qualifications that meet the Standard are in general at a level equivalent to the international standard for doctoral qualifications offered elsewhere.

Of course, from the outset it was clear that the study would identify areas for further development – these were summarised in Section 10. Further, it was considered useful to list those exemplary practices which may be considered as good practice and worthy of emulating – those were presented in Section 9.

In this Section, some fundamental key recommendations to further improve the quality of the doctoral qualifications and their programmes in South Africa are listed. The whole Report has many recommendations that are embedded in the narrative of the various Sections. What we have sought to identify and list below are those key recommendations that, if implemented, have the potential to significantly advance the quality of the doctoral qualifications being offered in the higher education sector in South Africa. These are listed in terms of their pertinence for institution Councils, Senates and Management to consider, and those pertinent for outside stakeholders. The inclusion of outside stakeholders is considered absolutely essential, given the leading influential role they play in the support of our academic institutions.

11.2 Recommendations to Institutions

1. There is clearly a need for additional supervisory capacity across the national system. While it is recognised that programmes for training supervisors are in place in some institutions, these are not generally mandatory, and there is usually no certification of the training. There are also few reports on continuous professional training for practising supervisors (see Section 7.2.1). It is recommended that for those institutions where such programmes are not currently in place, they should be established and/or linked to national initiatives (see the further recommendation in Section 11.3).

2. Section 7.5.1 summarised just some of the reasons why doctoral students take much longer to complete than expected (as reported by several Review Panels in their Reports). As these reasons will depend on many factors and will consequently vary across the different institutions, it is recommended that each institution conducts a survey to identify the primary reasons and develops plans to address the factors.

3. The awareness and integration of the graduate attributes in every doctoral programme is necessary and should be deliberately pursued by institutions. We specifically recommend that the frontiers of knowledge of different fields, and the structure and nature of knowledge of discipline specialisation, should be carefully considered when interpreting and applying the graduate attributes set out in the Qualification Standard.

4. We recommend that assessment criteria and assessment tasks that doctoral students should complete in order to determine if the graduate attributes have been attained, be clearly stated.

5. In addition to the graduate attributes prescribed by the Standard, we encourage institutions to also consider fostering attributes such as critical citizenry and consciousness of social responsibility. The latter enhances an appreciation of the context of an inquiry, the importance of 'engaged research' in addressing democratic South Africa's inherited socio-economic imbalances, and the need for a doctoral qualification to be seen as a 'public good' that broadly benefits society rather than focusing exclusively on the private good driven by private motive.

6. For future reviews of the doctoral (or other) programmes being offered, the manner in which an institution sets out to prepare its SER should be managed, through clear strategic intent and objectives, as a collaborative approach within the institution, and with careful monitoring and evaluation of operational activities (see Section 3.2).

7. Institutions are encouraged to consider doing away with the full-time/part-time categorisation of doctoral students at registration, and to view all doctoral students equally, with respect to provision of supervision, academic support, monitoring of development and progress, and criteria that may be used to assess the financial needs of the student. See the discussion in Sections 7.1.4 and 7.5.1.

8. It is strongly recommended that institutions establish Post-graduate Centres/Schools dedicated to supporting the academic and intellectual development of doctoral students through the whole doctoral journey (see Sections 7.3.3 and 8.1.6). Activities should *also* include the support and training of students at entry level through possible pre-registration programmes (see Sections 7.1.3 and 4.4.4).

9. Institutions must ensure that all policies related to doctoral studies are formally approved (and regularly updated), are consistently implemented across all faculties, and that all doctoral students are fully familiar with their contents.

10. It is recommended that, where not already in place, institutions introduce policies whereby the MoU between a doctoral student and the supervisor is mandatory and effectively managed with institutional oversight. See Section 7.2.3.

11. The development of a comprehensive institutional policy for the awarding of joint, dual, and co-badged degrees, which is aligned with the national policy, is encouraged, as this will open new opportunities for doctoral training. See Section 7.4.2.

12. It is expected that institutions should implement equity imperatives involving increasing the numbers of doctoral students and supervisory staff from marginalised groups (Africans, women), and students from diverse backgrounds as contemplated in the White Paper (1997, 1.13).

13. A deliberate effort on the part of some institutions is required to ensure that doctoral studies reflect global/international and regional contexts and attempts at the transnational level to set doctoral benchmarks, as contemplated in the Standard.

14. Where appropriate, institutions should encourage doctoral topics that address local, regional and continental imperatives that have the potential to contribute to social and economic well-being of the region, and regional South African cultural development.

15. Fostering decolonial narratives, including locally constructed knowledge and diverse epistemologies through doctoral topics is recommended, where appropriate.

16. Institutions are encouraged to find their unique niche(s) for their doctoral qualifications, guided by their institutional visions and missions as well as their typologies and locations, given the current trend towards growing homogeneity within the higher educational system in South Africa.

17. Institutions are encouraged to consider offering the professional doctorate, especially in those fields of professional practice that would benefit from the inclusion of coursework (and even work-integrated learning) in the curriculum. Such offerings would also result in the opportunity for constructive differentiation between institutions to increase with time. See Sections 2.2 and 4.2.

18. It is recommended that the higher education sector adopts a more rational, structured and defensible approach in the use of qualifiers when considering the naming of doctoral qualifications (including their abbreviations). See Section 2.3.

11.3 Recommendations to the higher education sector

1. As discussed in Section 5.2, this Report has brought to the fore the challenging factors affecting doctoral students in South Africa. These factors reflect the socio-economic context of many of the doctoral students in South Africa, and highlight the need for a more comprehensive national programme for doctoral education generally, with a greater degree of coordinated academic support, mentorship and financial support, including bursary funding.

2. The national system would tremendously benefit from nationally-coordinated programmes (with stable funding in the form of grants from DSI and/or the NRF) and without duplicating the UCDP (activities and initiatives), to increase the number

of academics who can provide supervisory capacity in HEIs. This could include the regular offering of comprehensive mentoring and supervision capacity development programmes for early-career supervisors as well as refresher training workshops for more experienced supervisors.

3. Special urgent and focused interventions are required for those institutions whose doctoral qualifications currently do not meet the Standard.

4. The level of preparedness of persons admitted to doctoral studies significantly affects their ability to cope with the studies and complete on time. It is time for the system to consider a national review of the Master's qualification(s) which, according to almost all institutions, are required as the pre-entry qualification requirement (in accordance with the HEQSF).

5. We strongly recommend that the CHE reviews the specifications of doctoral degrees in the HEQSF, and then requires that institutions comply with the HEQSF in updating their doctoral qualification specifications. We endorse the view of the Standard Development Reference Group, as included in an annexure to the Standard submitted for consideration by the CHE. The Reference Group's recommendations included the following provisional amendments:

    a) Deletion of the first sentence in the section *Purpose and Characteristics* of the Doctoral Degree (without modifier);
    b) Deletion of the term 'Professional' in the title of Doctoral Degree (Professional);
    c) Renaming of the variants to Doctoral Degree (research-based) and Doctoral Degree (research- and coursework-based);
    d) Review of the reference to, and placement of details of, the 'Higher Doctorate'.

These proposed recommendations, if implemented, would address several areas of concern noted by ourselves during the course of this Review.

Annexure A:

LIST OF INSTITUTIONS OFFERING THE DOCTORATE

Private institutions
Cranefield College
Management College of Southern Africa
St Augustine College of South Africa
South African Theological Seminary
The Da Vinci Institute for Technology Management
Public Institutions
Cape Peninsula University of Technology
Central University of Technology
Durban University of Technology
Nelson Mandela University
North West University
Rhodes University
Sefako Makgatho Health Sciences University
Tshwane University of Technology
University of Cape Town
University of Fort Hare
University of Johannesburg
University of KwaZulu Natal
University of Limpopo
University of Pretoria
University of South Africa
University of Stellenbosch
University of the Free State
University of the Western Cape
University of the Witwatersrand
University of Venda
University of Zululand
Vaal University of Technology
Walter Sisulu University

Annexure B:

QUALIFICATION STANDARD FOR DOCTORAL DEGREES

Higher Education Qualifications Sub-Framework

Qualification Standard for Doctoral degrees

The process of drafting this standard is described in the Introduction.

November 2018

The Council on Higher Education (CHE) is an independent statutory body established by the Higher Education Act, no. 101 of 1997 (amended). The CHE is the Quality Council for Higher Education, advises the Minister of Higher Education and Training on all higher education issues and is responsible for quality assurance and promotion through the Higher Education Quality Committee.

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HIGHER EDUCATION QUALIFICATIONS SUB-FRAMEWORK STANDARDS DEVELOPMENT: POLICY AND PROCESS

Introduction

National policy and legislative context

In terms of the National Qualifications Framework (NQF) Act, 67 of 2008, the Council on Higher Education (CHE) is the Quality Council (QC) for Higher Education. The CHE is responsible for quality assurance of higher education qualifications.

Part of the implementation of the Higher Education Qualifications Sub-Framework (HEQSF) is the development of qualification standards. The HEQSF, in turn assigns to the CHE the responsibility for developing standards for all higher education qualifications. Fundamental aspects of standards development – the legislative background, the aim of qualification standards, the principles and characteristics that influence standards development, what can and cannot be expected of qualification standards, and the prescriptive scope of standards vis- à-vis institutional autonomy and disciplinary responsibility – these aspects are set out in the CHE *Framework for Qualification Standards in Higher Education* (2013).

Standards development is aligned with the *nested approach* incorporated in the HEQSF. In this approach, the outer layer providing the context for qualification standards are the NQF level descriptors developed by the South African Qualifications Authority (SAQA) in agreement with the relevant QC. One of the functions of the QC (in the case of higher education, the CHE) is to ensure that the NQF level descriptors 'remain current and appropriate'. The development of qualification standards for higher education therefore needs to take the NQF level descriptors, as the outer layer in the *nested approach*, into account. An ancillary function is to ensure that they 'remain current and appropriate' in respect of qualifications awarded by higher education institutions. This means that they need to be responsive to the distinctive features of each field of study.

A secondary layer for the context in which qualification standards are developed is the HEQSF. This framework specifies the types of qualification that may be awarded and, in some cases, the allowable variants of the qualification type. An example of variants is the provision for two variants of the Doctoral degree: the Doctoral degree (without modifier) and the Doctoral degree (with the modifier 'Professional'). The HEQSF also specifies the purpose and characteristics of each qualification type. However, as indicated in the *Framework for Qualification Standards in Higher Education* (CHE, 2013), neither NQF level descriptors nor the HEQSF is intended fully to address, or indeed capable of addressing, the relationship between generic qualification-type purpose and the specific characteristics of that qualification type. One of the tasks of standards development is to reconcile the broad, generic description of a qualification type according to the HEQSF and the particular characteristics of qualifications awarded in diverse fields of study and disciplines, as defined by various descriptors and qualifiers.

Framework for standards development

The development of qualification standards is guided by the principles, protocols and methodology outlined in the *Framework*, approved by the Council in March 2013. As stated in the *Framework*, higher education standards aim 'to play a meaningful role not only in establishing benchmarks for ***assuring*** quality, but also in ***developing*** quality in the sector, while recognising the fundamental importance for higher education institutions to promote their own internal processes of quality assurance.'

The focus of a standards statement is the relationship between the purpose of the qualification, the attributes of a graduate that manifest the purpose, and the contexts and conditions for assessment of those attributes. It is a **threshold** statement, establishing minimum criteria for the award of the relevant qualification. On the grounds that a standard also plays a developmental role, the statement may include, as appropriate, elaboration of terms specific to the statement, guidelines for achievement of the graduate attributes, and recommendations for above- threshold practice.

A qualification standard is a statement that indicates how the purpose of the qualification, and the level on the NQF at which it is awarded, are represented in the learning domains, assessment contexts, and graduate attributes that are typical for the award of the qualification. Qualification standards are not the same, in either scope or effect, as other modalities used for the establishment of standards in higher education, for example, resource allocation standards, teaching and learning standards, or standards used for the grading of individual students. Matters such as actual curriculum design, tuition standards and standards for resource allocation for a programme are the responsibility of the institution awarding the qualification. Nor does the standard prescribe the duration of study for the qualification. It establishes the NQF level on which it is awarded, and confirms the minimum number of credits as set by the HEQSF. The standard relates to all programmes leading to the qualification, irrespective of the mode of delivery, the curriculum structure, and whether or not a prior qualification at a lower or the same level on the NQF is a prerequisite.

The standard aims to be accessible and beneficial to all relevant parties: the institutions awarding the qualifications, the CHE as quality assurer of the qualifications, the students and graduates of those qualifications, and their prospective employers.

The process of development

The drafting of this standards statement is the work of a group of academic experts with experience in the supervision and assessment of Doctoral studies. They were invited after consultation with the institutions offering Doctoral programmes, following which a Reference Group was convened by the CHE. Members of the Group participate in their individual capacity, not as representatives of any institutions or organisations.

The Group met on a number of occasions during the period 2017-2018, and the standard statement has been through a number of iterations and revisions. In April 2018 a draft version was disseminated to the higher education institutions and the National Research Foundation (NRF) for narrow consultation. A revised draft version was later disseminated for public comment in October 2018. Comments and recommendations received were taken into account by the Reference Group. The standard, therefore, is cognisant of generic academic interests, as well as the diversity of institutional contexts and disciplinary diversity in which Doctoral studies are conducted. This standard statement was formally approval by the Higher Education Quality Committee of the Council on Higher Education on 8 November 2018.

The HEQSF currently provides for two variants of the Doctoral degree. The characteristics of the two variants, as established by the HEQSF, are set out below. In this Standard statement, the variants are referred to as the Doctoral degree (General)[1] and the Doctoral degree (Professional).

Doctoral degree (General)

CHARACTERISTICS

The doctorate provides training for an academic career.[2] It requires a candidate to undertake research at the most advanced academic levels culminating in the submission, assessment and acceptance of a thesis. However, candidates may also present peer- reviewed academic articles and papers, and, in certain fields, creative work such as artefacts, compositions, public performances and public exhibitions in partial fulfilment of the research requirements. Coursework may be required as preparation or value addition to the research, but does not contribute to the credit value of the qualification. The defining characteristic of this qualification is that the candidate is required to demonstrate high level research capability and to make a significant and original academic contribution at the frontiers of a discipline or field. The work must be of a quality to satisfy peer review and merit publication. The degree may be earned through pure discipline-based or multidisciplinary research or applied research. This degree requires a minimum of two years' full-time study, usually after completing a Master's Degree. A graduate should be able to supervise and evaluate the research of others in the area of specialisation concerned.

An additional type of doctorate, the Higher Doctorate, may be awarded on the basis of a distinguished record of research in the form of published works, creative works and/or other scholarly contributions that are judged by leading international experts to make an exceptional and independent contribution to one or more disciplines or fields of study.[3]

(Higher Education Qualifications Sub-Framework, CHE, 2013)

1 *In the HEQSF this variant, unlike the Professional variant, is not accompanied by a modifier. The modifier 'General' is used here simply for convenience, to distinguish it from the Professional variant. No connotations beyond the specifications in the HEQSF are implied by the use of the term, nor does it imply any limitation on specialisation, as reflected in designators and qualifiers.*

2 *Since the promulgation of the HEQSF, the labour market for doctoral graduates has expanded beyond that of an academic career. Refer to Annexure B.*

3 *All Doctoral qualifications are awarded at NQF level 10, and must therefore meet this Standard, whether awarded on the basis of a single thesis, or a publication-based thesis, or a thesis accompanied by coursework or/and work-integrated learning, or of a combination of publications, creative work or other scholarly contributions. Where a submission comprises more than one form or unit of work, there should appropriate evidence of coherence.*

Doctoral degree (Professional)

CHARACTERISTICS

The professional doctorate provides education and training for a career in the professions and/or industry and is designed around the development of high level performance and innovation in a professional context. Candidates are required to undertake a combination of coursework and advanced research leading to the submission, assessment and acceptance of a research component comprising an original thesis or another form of research that is commensurate with the nature of the discipline or field and the specific area of enquiry. The research component should comprise at least 60% of the degree. Professional doctorates may also include appropriate forms of work-integrated learning. The defining characteristic of this qualification is that in addition to the demonstration of high level research capability it requires the ability to integrate theory with practice through the application of theoretical knowledge to highly complex problems in a wide range of professional contexts.

(Higher Education Qualifications Sub-Framework, CHE, 2013)

STANDARD FOR A DOCTORAL DEGREE

1. PREAMBLE AND RATIONALE

The doctorate is globally recognised as the apex qualification. It is in principle therefore also the most internationally transferable qualification. South Africa's doctorates are commonly regarded as equivalent to those produced anywhere. This standard is designed to help ensure that the higher education institutions in South Africa not only maintain the standing of their doctoral programmes and graduates, but seek, through innovation and enhancement, to develop their procedures and quality assurance.

The 1990s saw a marked global increase of interest in the doctorate from universities themselves, science councils and government. This increase has a number of causes, but significant amongst them is the idea of the knowledge economy and the importance it places on a steady supply of high level new knowledge for innovation and sustained growth. Almost all countries consequently prioritised an increase in doctoral growth, including those in Africa, though at a slower rate. South Africa's BRICS partners Brazil, China and India are just three countries which have dramatically enhanced their doctoral numbers. South Africa too has seen a fairly marked growth in doctoral numbers: between 1996 and 2012/13, graduates increased by an average of 6.4% per annum, higher than growth at any other degree level (Cloete et. al., 2015, pg. 181).

This growth rate began to rise in 2008 when the new subsidy formula for doctoral study, introduced in 2005, began to have an effect. This policy subsidised doctoral graduates at a far higher rate than other graduates, providing a sharp incentive for doctoral degree increases. The priority of doctoral study also received a boost from the projections by two authoritative sources: The Department of Science and Technology's (DST) 'Ten Year Innovation Plan 2008 – 2018' had declared that South Africa needed to increase its rate 'by a factor of 5 over the next 10 – 20 years' (DST, 2008, pg. 29); and the National Planning Commission's (NPC) National Development Plan (2012) estimated that South Africa needed 100 PhDs per 1 million of the population by 2030, from a then-current low of 28 per million. The NDP recognised the importance of the PhD for the development of innovation in the country, for transformation of the graduate cohort, and for the mission of universities in a high skills economy. Despite some doctoral growth, South Africa is not on track to meet these projections. Nevertheless, compared to South Africa's global peers, this growth rate falls far short of the number of doctorates deemed necessary for transformation and high skills growth.

Global growth has brought about an increasing diversity of the student cohort in both background and preparedness, as well as increased student mobility, which has led to attempts at the trans-national level to set doctoral benchmarks. The set of 'Dublin' descriptors for the Qualifications Framework for the European Higher Education Area is one such example (JQI, 2014); the proposed Southern African Development Community Qualifications Framework is another (Japtha & Samuels, 2017). Both are mechanisms for setting generic benchmarks. Indeed, the South African Qualifications Authority (SAQA) is seen as taking a lead in these initiatives in the southern African region. In considering the drafting of this doctoral standard, due consideration was given to these and other international models, including the European (EUA, 2005), British (QAA, 2015) and Australian (TEQSA, 2015) models and a variety of qualification frameworks of other countries. Globally there has been, in recent decades, considerable attention given national qualification frameworks; over 140 countries, including many in Africa, have been involved in their development and implementation (CEDEFOP, 2013). Qualification standards expand on the detail normally contained in qualification frameworks by aligning level descriptors with the purpose of a qualification, the attributes required of a graduate, and the contexts and conditions in which those attributes are assessed.

In South Africa, there is evidence that increased growth and diversity leads to a greater burden on the supervisory corps; they supervise more students and they increasingly supervise outside their areas of expertise (Cloete et. al., 2015, pg. 185). This is a phenomenon found not only in South Africa. Elsewhere, increased diversity has led to new pedagogic models and approaches, such as more taught components; integrated programmes, with workshops and training programmes; professional and practice-based approaches; and summer and winter schools. In South Africa, although there is certainly some experimentation with innovations and models for delivery, the evidence suggests that these initiatives comply with the Higher Education Qualifications Sub-Framework's (HEQSF) stipulation of either a (general) doctorate, or a professional doctorate, both of which must demonstrate the same level of research-related intellectual achievement at the exit level (Council on Higher Education, 2013).

Despite increased pressure, the evidence suggests that the one-on-one supervisory model remains the dominant one (Cloete et. al., 2015, pg. 190). Possibilities in this regard are constrained, too, by the fact that 60% of doctoral candidates at South African institutions study *part time* for the doctoral degree (op. cit., pg. 187). This has a direct impact on the throughput rate.

Currently, responsibility for quality for all aspects of the doctoral studies process resides with the institution, overseen by the HEQC. Quality is an issue frequently raised but rarely addressed directly. The public sees reports of fake degrees, and institutions see an increasing number of theses returned for revision and further examination, which some interpret as a consequence of dropping standards, poor supervision, or both. The nodes in the doctoral cycle at which quality can be judged include at least the following (adapted from Cloete et. al., 2015):

- the quality of the *candidate* at entry level (commonly dealt with by means of screening and selection processes, and also pre-registration preparedness programmes);
- the quality of the *doctoral programme* (including standards for acceptance of the proposal and progress monitoring);
- the quality of the *supervisor* (qualifications and experience), and the supervisory process;
- the quality of the doctoral *graduate* at exit level (including but not confined to employability);
- the quality of the *thesis* (quality of examiners and their reports);
- the quality of any *outputs* for the PhD (journal articles and citation rates).

The issue of quality arises with new urgency in contexts of high graduate growth as increased numbers require increased resources, both financial and human, to do justice to the increased educational load. South Africa is a country that has not increased resources at the same rate as some high performing countries. This creates a set of contradictory demands; for increasing numbers, without substantially increasing resources, and transforming the cohort to be more demographically representative, while, at the same time, maintaining or improving quality. It is in this context that ASSAf's (2010, pg. 6) recommendation 6 is significant:

> 'Apply strong quality assurance measures to the doctorate to prevent, on the one hand, irresponsible massification of the degree in the light of the substantial funding incentives for graduating PhDs; and, on the other hand, to deepen the quality of this final qualification across universities'.

The formulation of the doctoral standard is one such measure, which aims to set benchmarks for acceptable quality across the national higher education system, including both public and private institutions, on a par with global standards.

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2. PURPOSE

The purpose of studies towards the Doctoral degree is to develop the highest level of holistic and systematic understanding of scholarship in, and stewardship of, a field of study through an original contribution that advances the frontiers of knowledge.[4] In relevant cases the contribution may, in so doing, advance the frontiers of professional practice or/and creative activity.

The studies display mastery and development of appropriate research methods and skills[5], and pursuit of knowledge, that characterise the disciplinary, professional or inter-disciplinary discourse. This level of study aims for demonstration of the ability to engage independently in an extended course of research, showing thematic and conceptual coherence.

Such mastery and ability need to be embedded within an appropriate scholarly disposition, and the threshold attributes set out in this Standard ought to be demonstrated within this context. The graduate should represent the field of knowledge with critical and ethical integrity, assume a role as its custodian and steward, evince a scholarly curiosity, and be able, where relevant, to collaborate with peers from diverse academic backgrounds without compromising independent critical thinking. S/he has the ability to adapt to changing and varying contexts, and to serve as an agent of intellectual advancement. This is associated with an ability to engage with, and lead thinking, with local, national, regional and international research and/or professional communities and, where relevant, to seek benefit arising out of the research for any community or social group that was the subject of, or participated in, the research. In manifesting this scholarly disposition, the graduate exhibits intellectual autonomy, originality, authority, accountability, scholarly integrity, and ethical respect for, and application of, the relevant academic and/or professional codes of research and practice.

The Doctoral degree requires an original contribution to knowledge, which may – and, in the case of a Professional degree, should – contribute to the advancement of professional practice, and that can be disseminated to relevant parties in order to contribute to the advancement of knowledge in the relevant field of study, discipline, profession, or creative domain.

4 'Frontiers of knowledge' may have disciplinary, inter-disciplinary, multi-disciplinary or trans-disciplinary characteristics.

5 'Appropriate research methods and skills' may include new, or modification of existing, methods and skills.

3. NQF LEVEL AND CREDITS

The exit level of the Doctoral qualification is **NQF Level 10**. The minimum number of credits allocated to the qualification is 360 credits, all credits being at NQF Level 10.

In the case of a Doctoral degree awarded entirely by research, all 360 credits are allocated to the thesis.[6] Coursework may be required as preparation or value addition to the research, but does not contribute to the credit value of the qualification.

In the case of a Doctoral degree (Professional), a combination of coursework and research may be offered. The research component should comprise at least 60 per cent of the degree. A Professional Doctorate may also include appropriate forms of work-integrated learning, which would normally be credit-bearing and integral with the topic of research.[7]

6 All credits are allocated integrally. There is no sub-allocation to various aspects of the research work, such as the research proposal or the literature review.

7 All credits, including any credits allocated to coursework or/and work-integrated learning are awarded at NQF level 10 – re fer to 'Context s and Conditions for Supervision and Assessment of a Doctoral Qualification' below.

4. GRADUATE ATTRIBUTES

THE QUALIFICATION MAY BE AWARDED WHEN THE QUALIFICATION STANDARD HAS BEEN MET OR EXCEEDED. THE PURPOSE AND LEVEL OF THE QUALIFICATION WILL HAVE BEEN ACHIEVED WHEN THE FOLLOWING ATTRIBUTES ARE EVIDENT. THE ATTRIBUTES ARE ASSESSED WITHIN THE CONTEXT OF THE PURPOSE OF THE QUALIFICATION.

KNOWLEDGE

BROAD, WELL-INFORMED, AND CURRENT KNOWLEDGE OF FIELD[8] OR DISCIPLINE

The graduate has acquired well-informed relevant knowledge in the selected field or discipline. Through an original contribution achieved through independent study, the graduate integrates new with existing knowledge, thereby advancing the frontiers of knowledge. In addition to being well-informed about and well-versed in the literature[9] in a chosen field, the graduate is able to make a contribution to the relevant evolving debates in the field.

EXPERT, SPECIALISED, AND IN-DEPTH CURRENT KNOWLEDGE OF SPECIFIC AREA OF RESEARCH

The graduate demonstrates expert, specialised, and in-depth current knowledge of a specific area of research, which will be evident in the thesis or equivalent.[10]

INSIGHT INTO THE INTERCONNECTEDNESS OF ONE'S TOPIC OF RESEARCH WITH OTHER COGNATE FIELDS

The graduate demonstrates awareness of how the specific area of research relates, or is relatable, to other fields of study and practice which will be evident in the doctoral work.

ETHICAL AWARENESS IN RESEARCH AND PROFESSIONAL CONDUCT

The graduate demonstrates awareness of, and compliance with, the principles of ethics in research and, where relevant, professional protocols, which will be evident in the in-depth discussion in the thesis or equivalent.

AN ORIGINAL CONTRIBUTION TO THE FIELD OF STUDY

The graduate shows evidence of original and innovative thinking in research and, where applicable, creative practice and/or performance, which makes a special and novel contribution to the field of study.

8 'Field' includes inter-, multi- or trans-disciplinary topics.

9 Where relevant, 'literature' may include artefacts, visual or aural records, patents, musical scores, or records of creative performance.

10 The graduate is expected, thus, to go beyond merely synthesizing relevant knowledge in the field or discipline.

SKILLS

EVALUATION, SELECTION AND APPLICATION OF APPROPRIATE RESEARCH APPROACHES, METHODOLOGIES, AND PROCESSES IN THE PURSUIT OF A RESEARCH OBJECTIVE

The graduate demonstrates knowledge of, and the ability to create and introduce, where appropriate, and to evaluate, select and apply relevant research designs, approaches, methodologies, instruments, and procedures, appropriate for the doctoral work undertaken.

REFLECTION AND AUTONOMY

The graduate demonstrates ability to conceptualise and reflect critically, work independently, and arrive at defensible conclusions and solutions, based on appropriately- substantiated and defensible premises and analysis.

COMMUNICATION SKILLS, INCLUDING RELEVANT INFORMATION AND DIGITAL LITERACY SKILLS

The graduate demonstrates an advanced level of communicative competence, through capacity for extended, sustained and rigorous academic writing, including relevant digital literacy skills appropriate for doctoral research, and ability to relate individual research with reference to, and critical analysis of, associated research produced by scholars in the relevant intellectual and knowledge domain(s).

The graduate is able, as appropriate to the field of research, to communicate research findings effectively to expert and non-expert audiences alike, to defend them in the context of intellectual contestation, and to disseminate them in appropriate forms.

CRITICAL AND ANALYTICAL THINKING FOR PROBLEM-SOLVING

The graduate demonstrates ability to conduct research-related critical and analytical thinking, which shows an intellectual competence for problem-solving in diverse contexts, both familiar and unfamiliar.

5. CONTEXTS AND CONDITIONS FOR SUPERVISION AND ASSESSMENT OF A DOCTORAL QUALIFICATION

The context and conditions of assessment of a Doctoral programme recognise developments internationally of broadening the scope of Doctoral studies from the traditional Doctorate that catered for the purely academic route to the more diverse forms that cater for professionals, leaders, managers and practitioners. There is also recognition of the national diversity of institutions, professions, and skills requirements which provide for a diverse range of characteristics of Doctorates. The traditional thesis-based form is complemented by forms grounded in professional practice, peer-reviewed publication, and creative works and performance.

Assessment is a critical element of the establishment of Doctoral degree standards. Based on defined outcomes of the Doctoral degree, it is important to evaluate achievements of the candidate and the relevance of the research being carried out. This will entail reviewing thoroughly the material submitted by the candidate. It is important that the candidate presents a coherent, rigorous and novel set of results as the output of a Doctoral degree.

Written research work is assessed by an examination panel that includes unaffiliated and independent examiners (international and/or national) of appropriate research and Doctoral examination standing. In the case of research work that is based on creative performance or artefact, this would include independent assessment by the same examiners of a representative selection of the performance or artefact combination on which the written research work is based. The same principle applies to any work on which Doctoral research is based that is not reducible to writing.

Submission of written research work is ideally accompanied by oral assessment, at which the candidate defends the work. In cases where oral assessment forms part of summative examination, an oral examination panel would typically include unaffiliated and independent examiners (international and/or national) of appropriate research standing. In all cases the awarding institution needs to demonstrate the procedures it has adopted to ensure that assessment provides for a thorough, rigorous and appropriate review and evaluation of the research output, in certifying the ownership and integrity of the work.

The following aspects must be clearly defined in the protocols for assessment of a Doctoral programme. Assessment, in this context, is construed broadly, to include all phases of study, from selection of candidates to the award of the qualification. Protocols must include overarching institutional policies together with any supplementary provisions applied at sub- institutional (faculty or department) levels. All references to 'policies' (below) should be construed to include information about criteria, standing orders, rules, regulations and procedures for the application of policy.

5.1 INSTITUTIONAL CONDITIONS

- Conditions of recruitment, selection and enrolment of students in the Doctoral programme, including, where applicable, procedures for the recognition of prior learning that provides evidence of current research competence[11].
- Policies for adequate supervision (the supervisor or supervisory team comprising experienced supervisor(s) with appropriate Doctoral qualification(s)[12], supervision and research record(s)). This must include coherence between the research expertise of the supervisor(s) and the research topic supervised.
- Policies for the appointment of supervisors, and the adequacy of supervision workloads.
- Policies for the roles and responsibilities of students and supervisors, including criteria for student/supervisor interaction.
- Provision for a developmental role for new/emerging supervisors, in the form of co-supervision under guidance from experienced supervisors.

11 CHE policy prohibits the award of a qualification based wholly on RPL. The requirement that assessment must be 'appropriate to the particular modules' implies that RPL can be applied only in the case of coursework modules, if that applies, but not to research output. In a case of a Professional Degree where coursework is included, the HEQSF limits the credit allocation to 40 per cent of the total credits, meaning that, for a Doctoral qualification, RPL for coursework credit recognition is limited to 40 per cent of the credits.

12 Exceptions must be based on clear and justifiable criteria.

- Adequate infrastructure for hosting a Doctoral programme in the relevant field(s) of study (library resources, and laboratories and specialised equipment, if applicable).
- Adequate provision for unusual circumstances, including, but not limited to: apparent conflicts of interest, student leave, extension as a consequence of indisposition, suspension of studies, exceeding the maximum period of enrolment, termination of enrolment.
- Policy and procedures for the research process: provisional admission; assessment and acceptance of the research proposal; approval of research design and methodology; ethical clearance.
- Policies governing the form(s) that are the subject(s) of final assessment appropriate for diverse types of research output: thesis, portfolio of research work, artefact(s), creative work or performance, clinical practice or other output. Policies should include criteria to ensure internal coherence and equivalence between different forms or combinations thereof.

5.2 PROGRESS AND REVIEW

- Institutional mechanism to monitor progression in studies: formal progression procedures that will normally be used to check the level of knowledge and skills or informally through discussions with the candidate's supervisor. This includes written submission and oral presentation.
- Policies governing the monitoring of students' progress and how records of monitoring are kept and applied to inform students of progress and to assist them accordingly.

5.3 SUBMISSION

- Policies on the minimum, typical and maximum duration of the Doctoral programme.
- Policies on the submission process: the intention to submit, the research proposal, the regulations on submission procedures, and the thesis submission.
- Policies on the form and substance of the submission, and the evaluation of originality, coherence and contribution to knowledge in the context of diverse types of research production.
- Policies on any additional requirements over and above the submission of research work, such as peer-reviewed publication, if applicable.
- Policies on ensuring that the student's work is original, with adequate procedures for identifying, assessing and penalising proven instances of plagiarism.
- Policies for ensuring that any significant material assistance by others towards the completion of the thesis is declared.
- Satisfactory evidence that the implementation of submission policies is monitored and documented.

5.4 FINAL ASSESSMENT

- Policy for the selection of examiners that guarantees expertise in relation to the topic of study, independence, integrity, fairness, reliability and rigour of the examination process, the number of examiners (internal and external), and criteria for selection.
- Policy for the coordination and approval of examiners' reports; criteria and responsibility for deciding to award the degree; quality assurance and consistency of standards applied across the institution.
- Where oral examination is part of the final assessment process, procedures for such oral evaluation/examination.
- Policy, and evidence of inter-institutional agreement, for the award of joint, dual and co- badged degrees.
- Evidence that there are appropriate measures for ensuring the security, validity and reliability of Doctoral certification.
- Provision and procedures for appeals against examination decisions.

5.5 COURSEWORK

Policies for ensuring that all **credit-bearing** coursework (if applicable) is assessed at NQF Level 10, is relevant to the field or discipline of research undertaken by the student, and is externally examined.

5.6 WORK-INTEGRATED LEARNING

Policies for ensuring that **credit-bearing** work-integrated learning (if applicable) is appropriate, in terms of scope and complexity, for a Doctoral programme and relevance to the research topic, is assessed at NQF level 10, and that the awarding institution has suitable arrangements for the approval, monitoring and assessment of WIL. The policies should include provision for the external examination of credit-bearing WIL.

6. PROGRESSION

A Doctoral degree (including the Higher Doctorate) is the highest qualification type awarded within the qualification Framework.

(Higher Education Qualifications Sub-Framework)

Annexure C

NQF LEVEL DESCRIPTORS

The qualification is awarded at **level 10** on the National Qualifications Framework (NQF) and therefore meets the following level descriptors:

a. Scope of knowledge, in respect of which a learner is able to demonstrate expertise and critical knowledge in an area at the forefront of a field, discipline or practice; and the ability to conceptualise new research initiatives and create new knowledge or practice.
b. Knowledge literacy, in respect of which a learner is able to demonstrate the ability to contribute to scholarly debates around theories of knowledge and processes of knowledge production in an area of study or practice.
c. Method and procedure, in respect of which a learner is able to demonstrate the ability to develop new methods, techniques, processes, systems or technologies in original, creative and innovative ways appropriate to specialised and complex contexts.
d. Problem solving, in respect of which a learner is able to demonstrate the ability to apply specialist knowledge and theory in critically reflexive, creative and novel ways to address complex practical and theoretical problems.
e. Ethics and professional practice, in respect of which a learner is able to demonstrate the ability to identify, address and manage emerging ethical issues, and to advance processes of ethical decision-making, including monitoring and evaluation of the consequences of these decisions where appropriate.
f. Accessing, processing and managing information, in respect of which a learner is able to demonstrate the ability to make independent judgements about managing incomplete or inconsistent information or data in an iterative process of analysis and synthesis, for the development of significant original insights into new, complex and abstract ideas, information or issues.
g. Producing and communicating information, in respect of which a learner is able to demonstrate the ability to produce substantial, independent, in-depth and publishable work which meets international standards, is considered to be new or innovative by peers, and makes a significant contribution to the discipline, field, or practice; and the ability to develop a communication strategy to disseminate and defend research, strategic and policy initiatives and their implementation to specialist and non-specialist audiences using the full resources of an academic and professional or occupational discourse.
h. Context and systems, in respect of which a learner is able to demonstrate an understanding of theoretical underpinnings in the management of complex systems to achieve systemic change; and the ability to independently design, sustain and manage change within a system or systems.
i. Management of learning, in respect of which a learner is able to demonstrate the ability to demonstrate intellectual independence, research leadership and management of research and research development in a discipline, field or practice.
j. Accountability, in respect of which a learner is able to demonstrate the ability to operate independently and take full responsibility for his or her work, and, where appropriate, lead, oversee and be held ultimately accountable for the overall governance of processes and systems.

Annexure D

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