



Doctoral Examination

Exploring Practice Across the Globe

Edited by Vijay Kumar, Stan Taylor, and
Sharon Sharmini



DOCTORAL EXAMINATION

This book considers how the main doctoral awarding countries from across the globe examine doctoral degrees. It compares and contrasts their approaches, comments on their robustness, and identifies examples of good practice.

The doctorate is the highest award made by universities, but the examination process involved varies considerably in form and structure across the globe. This book studies the similarities and differences systematically on a cross-national basis, providing insights into the ways in which countries have sought to ensure that the awarded degree is comparable in standards. This book presents case studies of examination policies and practices covering 20 countries, which collectively are responsible for nearly 75% of global doctoral awards. Each chapter includes a summary of the key points, and a concluding chapter analyses the case studies from a comparative perspective.

This book is written by a distinguished international team of authors who are researchers in doctoral education, and will be of interest to all those engaged in the field particularly policy-makers, graduate deans and programme leaders, supervisors, administrators, examiners, and scholars in the field.

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Exploring Practice Across the Globe

*Edited by Vijay Kumar, Stan Taylor,
and Sharon Sharmini*

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In the memory of Margaret Kumar (1959–2014) and
Victor Danarajan (1953–2020).



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INTRODUCTION

Vijay Kumar, Stan Taylor, and Sharon Sharmini

Doctorates are the highest degree awarded by universities, and involve those studying for them in completing research projects which make an original contribution to knowledge and understanding in their discipline(s). For this reason, doctoral graduates are in demand across the globe as researchers whether in the public or private sectors of the knowledge economy or in the halls of academia.

In order to gain doctorates, candidates have of course to pass examinations. While there have been a few studies of doctoral examinations in individual countries, there has been no systematic cross-national study of the ways in which these vary across the globe, i.e., of the national contexts for examination, the structures of examination over the course of the degree, policies and procedures for examination including whether or not the candidate is examined orally and if so how, and the outcomes of the process. All of these factors, of course, have implications for the fairness of examination and for the comparative standards of doctoral degrees.

The aim of this book is to try to fill that gap in the doctoral education literature. The method adopted was to select case studies drawn from all of the major regions across the globe. Following Rosenberg (2019), the regions were defined as: Asia; Oceania; the Middle East, Arabia and N. Africa; Sub-Saharan Africa; North America; Central and South America; Russia and Eastern Europe; and Western Europe. Within these attempts were made to select the largest producers of doctoral graduates, using data for 2017 (the latest available at the time of writing) (World Bank, 2019) as aggregated by Taylor (2021).

As a region, Asia was the largest producer of doctoral graduates, 28.1% of the total. From this region, the case studies included the largest single producer, China (11.8% of world graduations), India (5.2%), Japan (3.3%), and Malaysia (1.5%).

The second largest region was Western Europe, which produced 26.2% of the global total. Here, the case studies included Germany (5.9%) and the United Kingdom (5.6%) as well as Spain (4.2%), France (2.7%), Italy (1.7%), and Sweden (0.6%).

The next largest was North America, responsible for 18.4% of global graduates. Here, the case study was of the United States, by far the largest producer in the region with 14.8% of the world total.

The fourth region was Eastern Europe and Russia, which produced 11.2% of global output. The case study here was the largest producer, the Russian Federation (5.7%).

Doctoral production in the Middle East, Arabia, and North Africa has increased rapidly in recent years, and the region accounted for 6.1% of the global total. The case studies here were of Egypt, the largest producer in the region (1.6%) and Turkey (1.3%).

Overall, Central and South America accounted for 6.0% of world output, of which the vast bulk came from Brazil (4.5%), the case study for that region.

Oceania produced 2.2% of global output, and is represented here by Australia (1.9%) and New Zealand (0.3%).

Finally, there is sub-Saharan Africa, one of the largest regions of the globe in terms of population, but it only produced 1% of the world's doctoral graduates. In this study, the region is represented by Kenya (0.3%), South Africa (0.6%), and Uganda, for which no data was available.

Collectively, the 20 countries chosen as case studies accounted in all for 73.5% – nearly three-quarters – of the world's known doctoral graduates in 2017.

For each selected country, leading researchers were invited to contribute a chapter which:

- described the overall context of doctoral examination;
- outlined the structure of examination over the course of the degree;
- explained the policies and procedures for final submission of the candidate's work and for the selection and nomination of examiners;
- outlined the process of examination, including whether or not candidates are orally examined and, if so, the form of the viva;
- set out the recommendations that examiners can make;
- indicated whether there were ongoing debates about doctoral examination and how this might change in the future.

Each of the case studies constitutes a stand-alone contribution to the literature on doctoral education for that country. But, in the concluding chapter, the editors have sought to aggregate the findings and reach initial conclusions about the different ways in which doctorates are examined across the globe and about their fairness and robustness in assuring standards.

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1

AUSTRALIA

Dan Bendrups

Introduction

Tertiary education has a prominent place in Australian society and culture. In total, 43 universities (37 public and six private) cater for a national population of around 25 million, as well as substantial cohorts of international students. All of Australia's public (and most private) universities offer doctoral degrees, and graduate research supervision (supervision of research masters and doctorates) is a routine expectation for Australian academics. A 2020 review of higher education found that there were more than 66,566 graduate research degree candidates enrolled in the sector and pre-pandemic data indicates a rising trend in annual doctoral completions, reaching 10,359 in 2020 (Australian Government Department of Education, Skills and Employment, 2020).

The purpose of this chapter is to offer a broad overview of the process of doctoral examination in Australia. This focus is exclusively on the PhD (Doctor of Philosophy, or 'research' doctorate), which is universally offered across the sector in all fields. There are other types of doctorates offered at Australian universities – professional doctorates, PhDs by prior publication, honorary or 'higher' doctorates, medical doctorates – but their examination parameters vary according to discipline, purpose, and focus. These named/professional degrees sit outside the scope of this chapter.

There are many existing studies regarding different aspects of doctoral examinations in Australia (e.g. Dally et al., 2019; Denholm & Evans, 2007; Dobson, 2012; Golding et al., 2014; Holbrook & Bourke, 2004; Kiley, 2009; Lawson et al., 2003). This chapter synthesises and complements this extant work to enable comparison with examination processes internationally. It is informed by examples from a selection of publicly available examination policies from a cross-section of Australian universities, and it provides a case study of the doctoral examination

process at a typical mid-size, mid-tier Australian university, in order to illustrate how national frameworks may be interpreted institutionally and applied in practice.

The national framework

The overarching expectations of Australian doctorates are set out in the *Australian Qualifications Framework* (Australian Qualifications Framework Council, 2013), or AQF, which informs the regulation of all degree programmes. The doctorate is the highest qualification level in the AQF (Level 10) and is distinguished from other levels by specific attributes, which in turn inform examination criteria. At Level 10, graduates are expected to have ‘systemic’ and ‘critical’ understandings of a specialised field of complex knowledge. By comparison, a Level 9 (Masters) graduate should demonstrate advanced and/or specialised knowledge, without the explicit demonstration of critical reflection.

Specifically, AQF Level 10 graduates should be able to demonstrate the ability to:

- engage in critical reflection, synthesis, and evaluation;
- develop, adapt, and implement research methodologies to extend and re-define existing knowledge or professional practice;
- disseminate and promote new insights to peers and the community;
- generate original knowledge and understanding to make a substantial contribution to a discipline or area of professional practice (AQF, 2013, p. 13).

Universities adapt to and adopt these AQF terms in their own examination policies, which prompt examiners to consider doctoral theses in terms of their engagement with literature and data, application of theory and method, and production of new knowledge that makes an original contribution to the field. These expectations apply equally to all disciplines and constitute the threshold that a thesis must meet to be considered successful.

All researchers in Australia are also expected to adhere to the *Australian Code for the Responsible Conduct of Research* (National Health and Medical Research Council, 2018) which informs consensus around preferred research practice and provides researchers with universal guidance for appropriate professional conduct. The Code is relevant to examination processes because it articulates the two key outcomes expected of research training in Australia: the production of new knowledge, and equally importantly, the development of effective, ethical, and independent researchers. This second point entails institutional and disciplinary attention to appropriate induction into research environments, modelling integrity, and ensuring supportive research interactions. Sometimes Code expectations are made explicit in examination criteria, as in this example from the University of Melbourne which states that a thesis must ‘demonstrate an understanding of, and commitment to, research ethics and integrity’ and ‘be

a careful, rigorous and sustained piece of work demonstrating that a research apprenticeship is complete and the holder may be admitted to the community of scholars in the discipline' (University of Melbourne, 2021).

It is common (though not universal) for universities to manage graduate research centrally, often through a Graduate Research School (GRS) or Academy, under a Dean (or similar) of graduate studies, and also a Board (or similar) of graduate research. Some of these units are small and accountable mainly for programme administration. Others have a more extensive remit that includes aspects of researcher development, supervisor development, and the development of the research climate within the university. Where examinations are concerned, these units act as institutional intermediaries between examiners and schools/departments, supervisors and graduate researchers, ensuring that professional distance is maintained, in a manner not dissimilar to how a journal editor might intermediate between authors and reviewers.

The structure of the doctorate

Australian doctorates resemble their British and other Commonwealth counterparts in that it is assumed that candidates enter the doctorate already equipped to commence their research independently. There are no government-stipulated coursework requirements for Australian PhDs at the present time. However, some universities do have specified coursework subjects in their doctoral degree programmes, and all universities have provision for doctoral candidates to audit or enrol in coursework subjects during their candidature. Where specified coursework subjects exist in doctoral programmes, they are typically focussed on research methodology, research design and method, and, depending on the research field, statistics. Some universities offer a graduate certificate to candidates who discontinue without completing a thesis, to recognise the learning they achieved.

The expected duration of an Australian doctorate is three years of full-time study. However, government regulations allow Research Training Programme (RTP) support for doctoral candidature to continue for up to 1,460 days (i.e., four years). So while most universities promote their PhDs' as lasting for three years (or part-time equivalent), in fact, most candidates take longer and may need additional time in the event of unforeseen interruptions. Typically, once any interruptions are accounted for, and except in circumstances where really significant challenges have arisen, most doctorates involve between three to four years (full-time equivalent) of candidature (McGagh et al., 2016, pp. 29–30). Candidature length was a focus of a recent sector review (McGagh et al., 2016), which recommended measures to avoid overly long candidatures. This led to changes in government funding models for doctorates, encouraging universities to carefully manage candidate progress throughout the degree.

Degree duration is an important factor to consider in the discussion of thesis examination as examiners need to be aware of degree duration as a possible

research limitation. Graduate research project design considers not just the possible discoveries of the project, but also what it is feasible to achieve within a specified timeframe. This is intended as a protective measure for candidates, to ensure that they are not set up for unfinished projects, but it can also be a source of frustration as there may be interesting questions that need to be excluded from the PhD due to time constraints.

Text components

Doctoral theses in Australia follow the widespread convention of an 80,000-word length. However, universities interpret this requirement differently. Where one university may describe it as a threshold or minimum, another may describe it as a target or ‘expected’ length (see Griffith University, 2021). Conversely, lower word counts are accepted in a range of circumstances, for example:

- where a thesis contains published papers instead of chapters, and where these publications may have restrictive word limits out of the candidate’s control;
- in disciplines such as mathematics where research findings may be best expressed numerically or in figures rather than prose;
- in creative and performing arts projects, where part of the doctoral work may be represented in non-text form (e.g. at the University of Queensland, a 30,000-word exegesis is required to accompany the submitted creative works [see University of Queensland, 2021]).

While examiners can request physical copies of theses, the national standard is for them to be submitted, distributed, and examined electronically.

Including publications

Provisions to include publications in the running text of doctoral theses have become widespread in Australian universities in the last decade or so. This has been enabled through the adjustment of examination policies at the institutional level, so while there is some inevitable difference between universities, the broad practice is for published work to be inserted (where copyright allows) into the running text of a thesis, supported by framing material before and/or after the insertion to explain how each publication fits into the overarching research project. If copyright prevents reproduction, publications may simply be replaced with a placeholder page containing a link to the publication DOI. Co-authorship is an anticipated part of this process, and candidates are expected to provide clear explanations of how each named author contributed to each publication (Mason et al., 2020).

A thesis including publications will always have an unpublished, explanatory component. While examiners often welcome the inclusion of published materials in a thesis (Sharmini et al., 2015), they also understand that publication, alone, does not guarantee quality. While an examiner may not mandate corrections to

a published work unless there is a specific error of fact requiring a retraction or the issuing of an erratum or corrigendum, they can ask that the candidate address any issues identified in the unpublished framing material of the thesis.

Non-text components

Provisions exist for theses to include non-text components for examination in disciplines where this is relevant, especially in the creative and performing arts (Brabazon et al., 2019). These components may be in the form of physical or electronic artefacts (physical artworks, audio or video recordings, digital files) that may be embedded in or examined alongside the thesis, or they may be time-bound or intangible events (theatre performances, gallery exhibitions) that require real-time evaluation.

Oral examination (thesis defence, or *viva voce*) does not feature prominently in the Australian thesis examination landscape (Kiley et al., 2018). At present, only three Australian universities have specific policy guidelines for oral exams for domestic PhDs (Dally et al., 2019), and a handful of others are trialling the introduction of an oral examination component. There are diverse views in the doctoral examination literature concerning the benefits and challenges of oral exams (Carter & Whittaker, 2009; Sikes, 2017; Trafford, 2003), and at present, there is no clear consensus among Australian universities regarding their introduction, though the conversation is active.

Examiner requirements

University policies set out the terms under which examiners may be nominated and appointed. Normally, examiners are nominated on the basis of their discipline expertise by a graduate researcher's supervisors (who may approach prospective examiners to ascertain their availability), and then formally appointed via an administrative unit such as a GRS, or by graduate research leaders within a school or faculty. This separation of nomination and appointment is an important feature of the Australian system. Its purpose is to preserve research integrity by reducing the risk of conflicts of interest arising from supervisors (or candidates) engaging directly with examiners.

Supervisors are not permitted to examine their own graduate research candidates, nor are they allowed to nominate examiners with whom they have a professional or personal connection (e.g. a partner on a funded project, or a co-author of a paper). The AQF requires a minimum of two examiners for doctorates, both of whom must be from outside the university where the doctorate has been undertaken. All universities ask for at least one additional 'reserve' examiner to be nominated so that, in the case of widely divergent reports, or if one examiner does not complete their assessment, they still satisfy the mandatory requirement of two examiners. Universities may, at their discretion, require additional examiners.

The AQF advises that all examiners should have an international reputation. This does not categorically mean that they need to be based internationally, but this is often how this expectation is interpreted by universities, who may stipulate that one or more of the nominated examiners be located at an overseas university (Dally et al., 2019). English is the prescribed language for all thesis submissions, which limits the international examiner pool to other English speakers.

The emphasis on conflict of interest is taken very seriously by Australian universities, but it can also shrink the pool of potential examiners, especially in small, niche fields, or ones that are highly collaborative. For example, the Macquarie University *Schedule for the Appointment of Examiners* stipulates a range of restrictions, typical for the sector, such as precluding examiners from being Macquarie university employees (within the last five years), doctoral graduates of the university (within the last ten years), or co-authors/editors of publications involving the candidate or their supervisors within the last five years (Macquarie University, 2021).

Examiners are expected to be research active members of the scholarly community, usually current university academics who have an appreciation of institutional processes and standards of doctoral-level work within their discipline. Examiners do not need to be from the same field of research, but they do need to be able to fully understand the research and provide suitably expert critique.

In most universities, supervisors consult with candidates about potential examiners. While candidates are not permitted to make formal examiner nominations, they have the right to identify conflicts of interest that would preclude specific examiners, and to refuse a nomination. A list of possible examiners is then drawn up, but candidates are not normally told who was actually appointed until the examination is complete (and indeed some examiners may request to remain anonymous). Examiners are not typically identified with each other unless there is a need for direct discussion to resolve contradictory reports. Even then, it is often the case that a university officer (sometimes an academic, sometimes an administrator) will intermediate between examiners, keeping their identities confidential from each other in the process of moderating divergent examinations (Kiley et al., 2018).

Research doctorates are examined on a pass/fail basis. Typically, examiners are asked to provide a summary evaluation report and then select from a set of pre-defined outcomes, which are all variants of four main options:

- pass without corrections;
- pass with minor corrections;
- pass with major corrections and/or resubmit for examination;
- outright fail, or, in some cases, the award of a lower degree (see Dally et al., 2019, p. 36 for further discussion).

Australian universities don't publicly report rates of success or failure, but it is anecdotally understood that outright fails are very rare, occurring mainly where

there has been misconduct, serious misunderstanding, or considerable disregard for the formative and developmental advice available to graduate researchers and their supervisors. In other words, examiners approach their task usually expecting a thesis to pass (Golding et al., 2014).

Case study: The La Trobe University thesis examination process

This case study is offered to illustrate how the factors described earlier play out in practice. La Trobe University (LTU) has been selected for convenience as it is the author's place of employment and therefore available for exploration. The specific processes described here reflect current procedures, and may be subject to future change, but they nevertheless serve as a useful representation of a typical doctoral examination process in Australia.

At LTU, graduate researchers and their supervisors are encouraged to begin thinking about examination early in candidature, with examiners framed as a target audience for the thesis. This is done, for example, through researcher development workshops that encourage open discussion and questions about the examination process, so as to demystify it.

Candidates begin to focus more directly on examination within the last six months of candidature. This is often an outcome of their third-year progress milestone, called the 'pre-submission review', which involves a substantial public presentation, the assembly of working documents (usually a draft thesis at this stage), and a formal review meeting with supervisors and other members of their progress committee. As LTU does not have a thesis defence, candidates are often encouraged to conceptualise their third milestone as a kind of pre-submission oral exam, which has the advantage of being able to lead to improvements and enhancements in the thesis before it is submitted. The process of preparing for and undertaking this milestone brings candidates and their supervisors into focus on the knowledge contribution being made by the thesis, which often organically leads to discussion about potential examiners.

To ensure consistency across the university, the GRS maintains a *Schedule for the Presentation of Theses* document, and policies pertaining to thesis submission and examination that all disciplines in the university must follow. These documents are available online and can be accessed by candidates and supervisors at any time. Typically, access tends to occur on a just-in-time basis, with candidates and/or supervisors referring to documents as they approach thesis submission.

In the lead-up to submission, candidates are required to complete a 'notification of intent to submit' form, which signals that their finalised thesis will be ready within the next four to six weeks. This enables the GRS to prepare for the impending examination, and triggers a series of other processes, including a request to supervisors for examiners to be nominated. Supervisors are guided in this process by policy and procedure documents, but these documents are not able to provide academic guidance about examiner suitability: this is up to

supervisors to ascertain, while also being mindful of the need to balance domain expertise regarding the project with sufficient professional and personal distance from the candidate and supervisors.

Finding the optimal balance of expertise and objectivity requires discrete discipline knowledge, and the process is inherently reliant on the judgement and research integrity of supervisors. In some cases, even very experienced supervisors may be uncertain about optimal examiner choices (excellent doctoral research often surpasses the knowledge of supervisors) and may refer to discipline colleagues for advice or seek the perspective of the candidate. Such conversations with candidates require forethought: to avoid conflict of interest candidates should not be directly asked about preferred examiners, or have it implied that this is their choice. Explicitly, candidates must never approach potential examiners about examination (to do so would void that person's ability to act as an impartial examiner). Supervisors manage this conversation in a number of ways, such as asking candidates broadly about researchers who have inspired their work, or perhaps asking candidates to suggest or comment on the suitability of lists of potential examiners.

Once potential examiners have been identified, it is the responsibility of supervisors to reach out to them informally, as discipline colleagues, to see if they would be willing in principle to undertake the examination. Professional networks and scholarly associations are significant enabling factors for these interactions. There is no formal template for how these interactions should occur, but supervisors at LTU are advised to make a distinction between 'appointing' and 'approaching' potential examiners.

To avoid conflict of interest, it is not the job of supervisors to 'appoint' examiners; rather, to ascertain their willingness and availability to be nominated. Examiner nominations are submitted to a School-level Director of Graduate Research (DGR) who checks for examiner qualifications and independence, and then on to the Chair of the Board of Graduate Research (BGR) who makes a final decision. Examiners are then approached by GRS administrators, ensuring that the process is at arms-length from supervisors. Similar processes are followed at other Australian universities.

Supervisors are asked to nominate three examiners, including at least one international, of whom two will receive the thesis in the first instance. The third examiner is retained in the event that there is disagreement between the first two, or that one of the first two is unable to complete the examination task for whatever reason. All of these communications are managed by officers of the GRS. A turnaround period of six weeks is normal, though it is not unusual for this to be extended for an additional six weeks. If a new or reserve examiner is needed for whatever reason, there is the potential for 6–12 weeks of additional time to elapse. This can be a frustrating wait for candidates and supervisors, who are unable to intervene in the process. The GRS is unable to inform candidates or supervisors about examination details, but can provide periodic updates about whether reports have been received, or time extensions requested by examiners.

At LTU, as at other Australian universities, examiners are provided with broad assessment criteria that reflect the AQF Level 10 requirements:

- a. mastery of a substantial and original body of knowledge;
- b. critical appraisal of relevant literature and other sources;
- c. knowledge and understanding of appropriate methods;
- d. a satisfactory level of literary presentation (La Trobe University, 2021).

However, it is not always the case that these are followed closely. Examiners tend to offer wide-ranging all-encompassing appraisals of the work submitted, usually presenting their examination in the form of a written report, ranging in length from a single page to 10 or more pages (one recent example, a favourable report, nevertheless included dozens of pages of suggested corrections). Once completed, these reports are provided to the DGR within the candidate's home School, who is tasked with reading the reports, synthesising their content, checking that proposed revisions (where requested) are appropriate and feasible, and then recommending an outcome to the Chair of the BGR. If the examiners do not recommend a pass, or if they are significantly divergent, the DGR will convene an Advisory Panel comprising other senior discipline academics to recommend an outcome. This may also involve obtaining a third (reserve) examiner's perspective to inform the Advisory Panel's decision. Once an outcome has been recommended, this is acted upon by the Chair of the BGR, and ratified by the BGR, with a final recommendation then submitted to the University's Academic Board. The GRS communicates the outcome to the candidate and supervisors, and advises what follow-up actions may be required.

The next step in the process depends on the examination outcome. If no corrections are required, the candidate is asked to re-check their final submission and provide it to the GRS within a matter of weeks, without further correspondence. If minor revisions are required, candidates are given four weeks in which to address the corrections, and to then resubmit the corrected thesis together with a separate report detailing what corrections were made and responding to any other examiner comments. Supervisors are asked to endorse the changes and responses, and this is then reviewed by the DGR who decides if the changes sufficiently address the examiners' comments. If major changes are required, a longer timeframe (typically 12 weeks) for revision is provided. On rare occasions, examiners may insist that the revisions are so substantial that the candidate must re-enrol to undertake additional data collection or other significant new work. In these circumstances, up to a year of additional enrolment is arranged.

Summary

The key features of the Australian doctoral examination process are:

- a focus on academic and research integrity that is embodied in procedures for fostering impartial, objective, and often anonymous examination processes;

- supervisors are not involved in the examination of their own graduate research candidates;
- strong regulation of conflict of interest, reflected in measures to preserve distance between examiners, supervisors, and candidates;
- an expectation that examiners are of international standing in their field, which fosters extensive engagement with examiners based overseas;
- thesis submission procedures that enable the inclusion of publications produced during candidature;
- the absence of oral exams as an expected part of the examination process;
- the scope of the doctorate is time-limited, reflecting what can be reasonably accomplished in three to four years of full-time study.

Conclusion

The discussion and case study presented in this chapter demonstrate many of the common measures used by Australian universities to manage examinations. The chief concern is preserving examiner objectivity, and while this may create frustrations for supervisors (in limiting the pool of examiners) and candidates (in terms of the potential length of time involved), it is a feature that goes a long way to safeguarding academic integrity. In this regard, Australian doctoral examination processes are quite different from those of countries where supervisors might play an active role in the examination process, or where there may be fewer restrictions on the extent of past collaboration between supervisors and examiners.

Australia also differs from many other countries with regard to the absence of the oral exam, though as the LTU process demonstrates, an oral ‘defence’ opportunity is built into candidature at the pre-submission review milestone. Other universities have similar processes, and/or policies requiring that their candidates present publicly on their research during candidature. The absence of the oral exam may be especially obvious to international academics working in Australia (anecdotally, some of the most vocal advocates for the introduction of oral exams are those who have come from overseas), but perhaps not so much to domestically trained academics. This is a feature of the examination process that is likely to be revised in the sector in future (Kiley et al., 2018; Lovat et al., 2015).

Despite these differences, other provisions ensure that Australian doctoral examination practices are aligned with global expectations. The widespread inclusion of publications in thesis submissions is an important part of this, reflecting the rise of e-journals and article databases in contemporary research infrastructure. Additionally, the enduring expectation that at least one examiner be international means that supervisors need to be actively connected to their discipline networks both in Australia and overseas, and this connectedness is part and parcel of the development of a supportive and nurturing intellectual climate for the graduate researchers they supervise.

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2

BRAZIL

Christian Haag Kristensen

Introduction

Doctoral degrees emerged in Brazil in the 1930s, but it was only in 1965 that postgraduate education was formally recognised by the state with the issuance of Report 977/65 by the Conselho Federal de Educação (Federal Council of Education) (Brasil, 1965). In this report, a distinction was made between two types of training at the postgraduate level: *lato sensu* (focusing on specialised training for the professions such as medicine, law, and engineering) and *stricto sensu* (involving master's and doctoral programmes aimed at training researchers and teachers to work in higher education institutions) (Hostins, 2006).

Shortly afterwards, the universities were reformed along the lines of those in the United States with a focus upon research, teaching, and organisation in academic departments (Brasil, 1968). Following this, there was a growth in postgraduate programmes. By the early 1990s, Brazil was producing around 2,000 doctoral graduates a year. By 2020, there were 294 institutions offering, in all, 2,439 academic and 58 professional doctorate programmes, in which 124, 530 candidates were enrolled (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior [CAPES], 2021). The vast majority of these were enrolled in public institutions, either federal (59.6%) or state (28%), and only 12.3% were enrolled in private or community institutions (not for profit). In 2020 again, 20,066 doctorates were awarded (CAPES, 2021). This makes Brazil by far the largest provider of doctoral education in South America, and in the top 10 globally.

This chapter seeks to: (1) set out the background to doctoral examination in Brazil; (2) outline the general structure of doctoral examination; (3) consider the examination itself; (4) briefly assess the impact of the COVID-19 pandemic on the doctoral examination; and (5) summarise arrangements and present conclusions about doctoral examination in Brazil.

The background to doctoral examination

The federal constitution of Brazil enshrines the principle of university autonomy, which leaves it for institutions to establish their own policies, procedures, and provisions at all levels of education (undergraduate, *lato sensu*, *stricto sensu*). This means that there is not, in Brazil, a ‘national framework’, in the sense of an explicit regulation of the doctoral examination. Instead, it is up to individual awarding institutions to establish their own frameworks. This could have led to a scenario of high heterogeneity in doctoral examination procedures and policies between different institutions. But in practice, there are relatively common procedures among the different institutions, as will be seen. These commonalities seem to stem from two factors.

First, in Brazil, doctoral programmes are approved and their quality is monitored by CAPES, a federal foundation currently under the Ministry of Education (MEC) (CAPES, 2008). This foundation conducts quadrennial evaluations of a range of matters, including the standards of awards and publishes reports, so there is a strong incentive for institutions to follow best practice, including in relation to doctoral examination.

Second, for decades Brazilian scholars have been supported by CAPES and the Conselho Nacional de Desenvolvimento Científico e Tecnológico (National Council for Scientific and Technological Development) to do part of their training in universities abroad. This exposure to models adopted in North American and European universities seems to have contributed to a certain consensus on the general procedures for the doctoral examination across different doctoral programmes.

The general structure of doctoral examination

Doctoral programmes in Brazil commonly involve a minimum duration of two years of full-time study, although in most cases, students remain enrolled for four years. Students are required to attain credits, although the number varies between doctoral programmes within the same institution and between institutions themselves. This credit requirement is met through attendance at classes, orientation hours with the academic supervisor, and other training activities.

Once candidates have met these requirements, they then proceed to produce a proposal for their research project. As in the United States, this is assessed through a qualifying examination. Generally, the aim of this is to assess the capability of the student in the field of study or theme chosen by him/her, as well as the viability of the proposed research project. Normally, the qualifying exam takes place halfway through the doctoral programme, but it can also be at a later stage. The purpose of the qualifying exam is usually to verify the progress of the execution of the activities originally proposed in the research proposal and, indirectly, to assess the state of preparedness of students to present the thesis and submit it for examination.

For the qualifying exam, the student will normally submit a written theoretical paper on the thesis topic and an outline of the proposed research, and also make an oral presentation to an examining committee. The qualifying exam committee is usually composed by the supervisor, a professor from within the institution affiliated to the graduate programme (who acts as a reporter) and two similarly affiliated external professors. The latter will very often make suggestions for theoretical aspects that need further study and for the development of the research project.

Before final submission, the student needs to have: gained all the academic credits; taken the required classes; carried out any activities specified in the postgraduate programme (seminars, teaching practice, etc.); obtained proficiency in a foreign language; passed the qualifying examination; completed their research project; and finalised their thesis. When these requirements have been fulfilled the student and his supervisor make a formal request to the Programme Coordinator for the appointment of an examination committee. In some programmes, the thesis is pre-reviewed by a rapporteur – usually an internal member of the postgraduate programme committee – before authorisation is given to the appointment of the examining committee.

For academic doctorates, all members of the examining committee are expected to have a PhD degree themselves and some previous experience of supervising PhD students. There is some variation as to the number of members in an examining committee, but the most common is for the committee to be composed of the supervisor plus a further three to four members. In many programmes, there are requirements for a large proportion of the members of the examining committee to be external to the programme or even to the institution. Once the examining committee is approved, a date is scheduled for the oral examination, and the thesis is sent to the committee members.

For professional doctorates, there is a greater degree of flexibility with regard to the final work to be submitted for examination. In particular, it may not be a requirement to submit a thesis in the traditional format, as in some programmes portfolios or technical products, such as patents or processes, may be presented instead. Similarly, the examining committee for such doctorates may include members who work in the relevant profession and who do not necessarily have a doctoral degree.

A recent trend in Brazil is for the different chapters that make up an academic thesis to be organised in the form of scientific articles, i.e., a PhD by publication. Particularly in the biological and health sciences, it is not uncommon for the thesis to be a compilation of articles already submitted or even published in scientific journals.

The examination itself

In Brazil, the exam actually involves two distinct processes: the prior reading of the final work (i.e., the thesis) and the oral exam or public defence (Pezzi & Steil, 2009).

The doctoral examination in Brazil is open to the public. Very often, besides the candidate and the examining committee, there are colleagues, research group assistants, graduate students and friends, and family of the candidate, although it is rare for them to be invited to participate. In this sense, although rigor and formality prevail in the exam itself, this situation also becomes, to some degree, a social event.

The doctoral examination usually begins with a formal reading of the agenda, which sets the session in motion. Immediately afterwards, the candidate makes an oral presentation (lasting between 30 and 60 minutes) on the main elements or sections of his/her thesis. The session is usually chaired by the candidate's supervisor who, after the presentation, gives the floor to the members of the examining committee. Each member makes an assessment of the written material (thesis) and the oral presentation. Depending on the situation, this moment may be more formal (when the examiner gives his or her assessment of the work) or more informal, when the examiner and the candidate engage in a dialogue based on the points or questions raised by the examiner. After all the questions have been asked, the examining committee withdraws and, in a private setting, writes a final descriptive report and makes a final recommendation.

Usually in Brazil, the recommendation consists of approval, partial approval, or disapproval, instead of the use of grades. The recommendation, together with the minutes of the doctoral examination session, is then publicly read out by the session's chair who, soon after, concludes the session.

Beyond this, it may be noted that there are some important variations between different programmes with regards to the doctoral examination.

First, in some programmes, examiners' reports or questions prepared by the members of the examining committee are sent to the candidate prior to the public session of thesis defence so that they are able to prepare.

Second, there can be variations in the roles of supervisors in the doctoral examination. Although in general the session is chaired by the supervisor, in some programmes the supervisor is passive and does not contribute beyond that, whereas in others they can participate in the examining process, including influencing the final deliberations of the examining committee.

The third point is related to the adoption of standardised forms so that the members of the examining committee carry out their evaluation. As noted earlier, the quality of doctoral education including the standards of award are monitored by CAPES, which reviews programmes every five years. In order to provide evidence of the quality of doctorates, there is a growing tendency for institutions to require examiners to use forms or instruments with the specification of items and criteria to be evaluated in relation to the thesis and the oral presentation.

Fourth, there can be differences in the weightings assigned to the final product (the thesis) and to the academic trajectory of the candidate, as demonstrated by the oral presentation. In Brazil, there is a tendency to give greater weight to the latter in terms of the student's stage of training and potential to continue as an independent researcher.

The impact of COVID-19 pandemic

The COVID-19 pandemic notably impacted higher education in Brazil, as health measures through federal, state, and municipal decrees led to the adoption of online resources to conduct courses, seminars, and even data collection in research projects. Institutions needed to quickly revise procedures and internal regulations to make this possible, in response to government regulations.

Regarding the doctoral exam, the main impacts were on the submission of the thesis to the examining committee, which became an electronic document, and on the public session of the thesis defence, which began to be held online, through videoconferencing platforms. Considering the continental dimensions of Brazil, it became evident that the online doctoral exam modality represents an enormous reduction in terms of travel time of the examiners and financial costs, compared to what was required for an in-person doctoral presentation and defence session.

Summary of arrangements and conclusions

In summary, doctoral examinations in Brazil seem to have the following common characteristics:

- most postgraduate programmes involve a qualifying exam, which takes place usually halfway through the doctoral programme. The purpose of this qualifying exam is to assess the research project, the theoretical or methodological mastery of the candidate in his or her field of study and, eventually, the progress made by the candidate with their research;
- besides the examining committee, it is common that the audience in the doctoral public examination session includes colleagues from the research group, friends and family of the candidate, giving the event a certain social flavour;
- the doctoral examination, held at the end of the programme, involves the prior submission of the thesis for evaluation by the examining committee and the oral presentation of the candidate in a public session (*viva voce*);
- the examining committee is usually composed of the candidate's supervisor, who chairs the session, and three to four other members (at least two of whom are external to the postgraduate programme and who may be external to the institution).

After the oral presentation, each member of the examining committee conducts discussions with the candidate about the thesis and the topics. At the end, the examining committee decides whether the candidate should be approved or rejected.

Beyond that, as noted earlier, there are variations in whether feedback is given prior to the viva, in the roles of supervisors, the use of standardised reporting forms, and weightings in examination, but these are relatively minor in comparison with the common factors.

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3

CHINA

Shuhua Chen

Introduction

Although degree awarding documents may be traced back to 1935, before the People's Republic of China was founded, Mainland China (hereinafter China) did not have doctoral education until 1978 (Wu et al., 2001). In that year, 18 doctoral students were admitted through national entrance examinations (Yang, 2012). China began to expand doctoral education in the following decade, in order to address the shortage of faculty members in higher education, and from 1982 to 1989, doctoral enrolments increased 20 times. Doctoral education continued expanding since then and since 2004, the growth rate has remained at 2–3% per year.

There are a total of 594 regular higher education institutions (HEI¹) that grant postgraduate degrees, and 589 of them confer doctoral degrees (Ministry of Education, 2020). Of the latter, 50 grant 60% of China's doctorates (Wang, 2012). Also, there are 233 research institutes that confer postgraduate degrees including doctorates, but the majority of doctorates are awarded by HEI.

While there have been professional doctorates in China since 1998, they are far outweighed by academic doctorates (the PhD). According to the Ministry of Education (2016), from 2009 to 2016 the ratio of academic doctorates versus professional ones was nearly 20:1. As of 2017, professional doctorates were concentrated in six fields (stomatology, medicine, veterinary medicine, education, engineering, and Chinese medicine) (Bao et al., 2018), and there were only a very small number of such programmes, for instance, 48 in clinical medicine, 25 in engineering, and 15 in education (Yuan & Wang, 2015).

The first doctoral programmes required little coursework, but contemporary ones all require students to complete some courses before working on their research projects. Following the coursework element, there are doctoral examinations,

including comprehensive examinations, the research proposal defence, progress report, pre-defence, dissertation evaluation, and the final oral defence.

This chapter sets out the national framework for doctoral examinations, outlines the structure of the system, and summarises the key features of doctoral examinations in China. It is based on a web search of collated government and institutional documents and statistics. Specifically, the websites of 50 major doctorate granting HEI (Wang, 2012) were examined for information regarding how they regulated and practised doctoral examinations. Of these institutions, 32 were former Project 985² institutions and 39 were on the list of China's Double-World-Class Universities Project.³ With regard to the availability of information, 47 have relevant documentation which was publicly available whereas the remaining 3 either had too little information on their websites or did not provide access to visitors.

The national framework for doctoral examination

In China, the Ministry of Education (MOE) oversees doctoral education through the Department of Degree Management and Postgraduate Education (DDMPE). DDMPE reports to China's State Council, which supervises the conferral of degrees. DDMPE is also known as the State Council Academic Degrees Committee (ADC). At each institution, there are institutional and faculty/school-level degree awarding committees. They are responsible for managing doctoral examinations and degree granting issues. In practice, academic units (departments and programmes) may have nuanced operations in administering doctoral examinations.

In 1980, ADC issued *Regulations on Academic Degrees of the People's Republic of China* (hereinafter referred to as *Regulations*), which defined three levels of academic degrees: bachelor's, master's, and doctorates. A year later, a companion document, *Guidelines for Implementing the Regulations on Academic Degrees* (hereinafter referred to as *Guidelines*), was issued to specify coursework requirements and the procedures for doctoral examinations. The *Regulations* were amended in 2004 to provide individual institutions with more autonomy on degree awarding issues. The *Regulations* and *Guidelines* have been the benchmarking documents for China's higher education.

Definitions of the doctorate and its assessment

The *Regulations* (State Council, 2004) states that doctoral degrees are awarded to those who

- have a solid and broad theoretical background and systematic and thorough knowledge in a field of specialisation;
- are able to conduct scientific research independently;
- make original contributions to science or to specialised technologies.

According to the publicly available data, the selected universities have all embodied these three criteria, using the exact wording, into their own regulations.

Until recently, a universal defining criterion for degree granting was publishing in academic journals and the majority of research universities still require doctoral students to have publications, normally prior to the final oral defence, in order to receive the degree. One problem with this is that lack of publication can delay doctorate granting or in some cases mean non-award of the degree. Now, however, a few universities are replacing this requirement with a variety of research-related products, such as patents, software copyrights, industrial designs, awards from academic competitions, and artefacts. Some have additional criteria, such as patriotism, morality, integrity, social responsibility, physical health, psychological health, and mastery of foreign languages.

The completion time for doctoral studies is normally four to five years with the maximum duration being seven to eight years. It is a requirement that at least two years should be spent on the dissertation. Students will have to withdraw from their programmes after the maximum duration of time has been reached.

The structure of doctoral assessment and examination

Chinese doctoral students may be admitted as regular students, fast-track students recruited from master's programmes, or fast-track students recruited from undergraduate programmes. Differences in recruitment result in differences in coursework loads and timelines for doctoral examinations. For instance, fast-track students often need to gain more course credits and take the comprehensive exam at a later time than regular students. Other than this, all students go through similar doctoral examinations, including a comprehensive exam, submission of a research proposal followed by an oral defence, initial submission of a written dissertation, a pre-defence, submission and evaluation of the dissertation, and the final oral defence. In addition, doctoral candidates are required to report progress in doctoral research to their doctoral programmes (called 'progress report' or 'mid-term reexam'), usually at the end of the year following a successful proposal defence, by submitting a written progress report and having an oral defence in front of an evaluation committee.

The comprehensive exam often takes place right after a student has completed coursework. It can be written, oral, or combined. It aims to test a student's mastery of foundational knowledge in a specialised area. Students with a pass will begin working on their research proposals, whereas failed students will re-take the exam in a few months. At some institutions, this exam may be merged into submission and presentation of the research proposal.

Usually between the third and fourth semesters (at latest the seventh semester), the student submits a research proposal for their dissertation project and attends an oral defence. This defence is very formal and the committee members, normally faculty members from within the candidate's department, vote to decide whether the student passes or not. Failed students have a chance to re-submit a

proposal and have a second defence. A second failure leads to the student's withdrawal from the programme.

Around six months later following a successful proposal defence, students are required to report their progress in dissertation work to an evaluation committee, a group of scholars, often convened by the supervisor or supervisory team. The evaluation committee votes to decide whether the candidate's performance is satisfactory. Passed students continue to work on their dissertation whereas failed ones are given the opportunity to re-take this exam after a few months.

Around a year following the progress report, a doctoral candidate submits a draft of their dissertation with the supervisor's approval. This document will not yet be sent out for formal evaluation. Rather, a pre-defence will be organised with the purpose of diagnosing any problems with the dissertation. This is a formal event and comparable to the final defence. The candidate presents the dissertation to a committee of scholars who come from within and outside of the home university. They must receive positive votes from the committee in order to go to the next step, submission of the dissertation. A failed student needs to re-submit the dissertation and re-take the defence.

Following a successful pre-defence, the candidate can make a formal submission of the dissertation to the university. The dissertation will then be sent out to examiners for review. Currently, there are three models of doctoral dissertation evaluation: blind review (with variants), optional blind review, and random blind review. The majority of the selected universities are employing blind review of doctoral dissertations and only recruit examiners from China. One university encourages international evaluation of doctoral dissertations.

Once the candidate has received a pass from the dissertation examiners, they proceed to the final oral defence. At all selected universities, the final defence is public and formal. The final decision is based on a majority vote of the committee.

Making submissions for examination

A candidate typically submits a draft of the dissertation nearing the end of the fourth year, or for fast-track students, fifth year, into the doctoral programme. For the selected institutions, the submission must always be approved by the supervisor(s). The dissertation should normally be written in Chinese, with exceptions for certain disciplines (e.g., foreign language studies), certain categories of students (international students, students in joint programmes), and particular circumstances (for international evaluation). If a dissertation is written in another language than Chinese, it should contain a long abstract in Chinese. A dissertation may be a monograph or a collection of articles, and it should be adapted for blind review purposes by removing identification information.

As aforementioned, the initial submission will not immediately be sent out for formal evaluation. Rather, the candidate's department organises a pre-evaluation of the dissertation with the purpose of diagnosing problems with the dissertation. The department calls for an evaluation committee. The committee is

typically composed of three to five scholars with expertise on the dissertation under review, but some institutions require up to seven. The committee members are typically full professors, with a few universities accepting associate and assistant professors. They may come from the candidate's home university or from other universities. A few institutions require at least one external examiner. The meeting is hosted by a chair (usually not the supervisor) and a secretary appointed to audio/video-record the whole process. The supervisor should be present and may ask questions, but they are often not counted as a committee member and/or allowed to vote. The outcome is either pass or fail. Passed candidates will complete revision and make formal submission, and failed candidates will be given the option to revise and re-submit, typically after three months. At a few selected institutions, the candidature may be terminated at this step when the committee decides that the dissertation is not up to the standards for a doctorate.

With a successful pre-defence, the candidate formally submit the dissertation for evaluation. Usually they need to submit several hard copies as well as upload an electronic version to the institution's submission system. Submission of hard copies was not a requirement during the COVID-19 pandemic.

Models of dissertation evaluation

Blind evaluation of doctoral dissertations is widely accepted in Chinese universities as a quality control measure. According to ways in which blind evaluation is operationalised, three major models of doctoral dissertation evaluation may be identified: compulsory blind review (with variants), optional blind review, and random blind review.

Compulsory blind review is likely the most popular model for dissertation evaluation for Chinese universities. Over 60% (30) of the selected institutions apply this model despite slight differences across institutions. For instance, while most of the institutions are practising double-blind evaluation, that is, concealing examiners' names from the candidate and vice versa; a few universities use single blind review and only conceal examiners' names from the candidate. Also, some universities send dissertations to both anonymous examiners and examiners whose names are known to the candidates and supervisor. Finally, a few institutions offer the option of applying for non-blind evaluation if the candidate has demonstrated excellence in research performance, for instance, an exceptional publication record.

Optional blind review means academic units are allowed to choose whether to use blind review or not. This model is less popular in the selected universities. A few institutions 'encourage' blind evaluation, as stated in their documents, and specify the proportion of the submitted dissertations that should be blindly reviewed.

Random blind review means institutions randomly draw a proportion of submitted dissertations for blind evaluation. It differentiates from the second model in that individual academic units are not given the option of not participating in blind review. In other words, all submitted dissertations have an equal opportunity to be drawn. Interestingly, this model may be mixed with the first model. For example, at the author's university, which employs the first model,

a submitted dissertation may be randomly pulled out for a blind review. And in this case, this dissertation will not be sent out for a regular blind review.

Responsibility for nominating and approving examiners

Regarding dissertation evaluation, there are three occasions when nomination of examiners is required: initial submission, formal submission, and final oral defence. Generally speaking, the candidate's department, the degree awarding committees and sub-committees, and graduate schools are all responsible for nominating and approving the selection of examiners; supervisors may have an influence on the nomination process, but doctoral candidates are rarely consulted. None of the institutional documents collected mentioned doctoral students' participation in examiner nomination.

When the initial submission has been made, it is the candidate's department that calls for the establishment of a committee of examiners (often three to five scholars, and in a few universities, more than five) to evaluate the dissertation and provide feedback at the pre-oral defence. But it is often not clear from the documents who nominates the examiners. Only a few of the selected institutions clearly state in their documents that it is the supervisor who nominates the examiners and the department which endorses the nomination.

At the formal submission, examiners may be nominated in different ways. For institutions that carry out any form of blind evaluation of dissertations, examiners may be nominated by supervisors or drawn from departmental, institutional and third-party databases. Only four institutions specify that supervisors initiate names of examiners, and nine have some kind of departmental databases of examiners. It is common for institutions to have databases from which they, rather than academic units where candidates belong, draw examiners directly. And lots of the institutions mention the use of third-party databases (for example, owned by the MOE). To address potential conflict of interests, supervisors are responsible for providing names of the scholars (usually two to five) who should be avoided in dissertation evaluation.

Once the dissertation has received a pass, the candidate's department organises the final oral defence. While composition of the oral defence committees always needs to be approved by the department, as noted above it is not always clear who nominates examiners. Eight of the selected universities indicated that the supervisor or supervisory team recommends examiners, whereas 18 others stated that the nomination fell upon the candidate's department. It should be noted that the composition of the final oral defence committee may or may not overlap with that of the pre-oral defence.

Criteria for the nomination of examiners

Regardless of the examinations (i.e., the pre-defence, dissertation evaluation, and the final oral defence), the ideal examiners would be a group of full professors who have expertise on the topic of the dissertation under review, with some

coming from the candidate's home university and some from other universities or organisations. Yet, the institutional data show slight differences across the institutions and across the events.

First of all, different institutions require different numbers of examiners. For the pre-defence, the committee may consist of between three and seven members. For dissertation evaluation, a dissertation may be evaluated by between two and five examiners. And the final oral defence committee may have between five and nine members.

Second, regarding the employment status, most institutions do not allow associate professors to sit on evaluation committees. The few institutions that do, require these examiners to be doctoral supervisors⁴. Some allow for experts from outside of academia (e.g., from enterprises) who are not doctoral supervisors.

Third, recruitment of external examiners differs between institutions and events. While the members on the pre-defence committee may come from the candidate's home university or outside of it, dissertation examiners and members sitting on the final oral defence committee are more likely to be external experts, coming from different universities/organisations. Some institutions require examiners to come from other provinces or even other countries particularly for dissertation evaluations.

Finally, the supervisor's role is different between institutions. A basic principle is that the supervisor should not evaluate his or her own student. Accordingly, the supervisor is usually not counted as a member on the pre-defence or the final defence committees. However, a few institutions do allow the supervisor to sit on the evaluation committee, and in this case, one to two additional members should be added to the committee. Two institutions even stipulate that the supervisor must chair the final oral defence.

The examination

The examination begins when a candidate makes the initial submission of the dissertation for a pre-evaluation and a pre-defence. The procedure of the pre-evaluation and pre-defence mimics the formal dissertation evaluation and the final oral defence. After reading the dissertation, the examiners provide feedback as well as judge whether it has met the standards for the doctoral degree. At the pre-defence, which is often public, the candidate presents their research project and answers the examiners' questions. Nearing the end, the committee members vote to decide whether the candidate can proceed to the formal submission. There are normally two outcomes:

- pass and proceed to formal submission of dissertation;
- refer and resubmit.

The first category often involves minor revision to the dissertation. For the second category, the candidate will be given three to six months to revise the dissertation and then re-take the exam.

For the formal dissertation evaluation, each examiner is required to submit an independent report, which contains comments on the quality of the dissertation and a recommendation for the next step. For the selected institutions, the recommendations may be presented as scores/grades, descriptive categories, or combined. Regardless of the form of presentation, there are usually four categories of recommendations:

- outright pass;
- pass subject to minor revision;
- resubmit and re-evaluate;
- reject.

The last two categories mean the dissertation is not up to the standards of the degree. A candidate proceeds to the final oral defence only if all examiners have recommended one of the first two categories. Examiners have the right to veto the dissertation. So with only one negative recommendation – even though all other recommendations are positive – the candidate will not be allowed to go to the next step. Depending on the numbers of the negative recommendations, the candidate may have the original dissertation sent to additional examiners for evaluation, or be required to submit a revised version in 3–12 months. All selected institutions allow the candidate to appeal regarding the outcome.

The final oral defence is held in public and some institutions post information about doctoral oral defences on their websites. The defence committee has a chair (sometimes from outside of the candidate's university), who ensures that all required procedures are carried out. There is a secretary responsible for taking notes and audio/video-recording the whole process. The secretary is not a committee member and does not vote. At some universities, this person can be any staff member, as long as they are familiar with the procedure of the oral defence; whereas at others, this person must be a faculty member or a postdoctoral fellow.

The defence takes one to two hours or so and is fairly standard across institutions. It often starts with the supervisor's introduction (occasionally by the Chair) of the candidate's achievements during their doctoral studies. This is followed by the candidate's presentation of the major points of the dissertation, which takes 20 and up to 60 minutes depending on the institution. Then the candidate answers questions. A few institutions allow the candidate to collect all questions first and then leave the defence room to prepare answers. Following the questioning session, the committee members meet in camera to discuss the candidate's performance and vote for a decision. The candidate passes when two-thirds of the examiners make positive votes. Due to the COVID-19 pandemic, doctoral oral defences arranged between early 2020 to 2021 were all held online. Committee members voted online as well.

After the oral defence, a candidate receives one of the following outcomes:

- pass and be awarded the degree
Normally passing the oral defence leads to the award of the doctorate. However, at least in one of the selected institutions, the candidate may pass the oral defence but be voted against receiving the degree.
- resubmit and re-take the defence
The selected institutions vary in revision time, with a range of three months to two years. Several institutions stress that the revision must be completed within the maximum completion time for the doctorate.
- be awarded a lower degree, if applicable
This recommendation is given if the majority of the committee members agree, and it only applies to candidates who do not hold a master's degree.
- not be awarded a degree
This recommendation seems to be rare and only one institution has it.

The government's quality check on doctoral dissertations

In order to ensure the quality of doctoral programmes, MOE conducted the first national quality check of archived doctoral dissertations in 2000. In 2014, ADC issued a regulation that made this practice a routine and systematic procedure (Ministry of Education, 2014). According to the regulation, MOE will randomly draw 10% of the doctoral dissertations submitted in the previous year from the database of the National Library of China and send them to three reviewers (Chen et al., 2018). A dissertation is considered 'problematic' if two of the reviewers grade it as 'not satisfactory'. Note the results of the quality check are mostly used to assess the quality of doctoral programmes rather than the quality of specific dissertations. Thus this mechanism is not related to revocation of degrees.

Summary

The key features of the Chinese system are:

- despite the national framework and benchmarking policy documents, institutions vary in their operationalisation of doctoral examinations, especially in evaluation of dissertations;
- there are multiple examination milestones during the doctoral process, probably more than in many other countries;
- institutions rely heavily on external authority for quality assurance of doctoral dissertations, as represented by the use of external examiners in multiple events. A unique feature in the current Chinese system is the use of examiner databases, which might belong to departments, universities, and third-parties;

- examiners are preferably full professors and doctoral supervisors, which entails a risk of marginalising early career academics in participating in doctoral examinations;
- results of doctoral examinations alone may not ensure the award of the degree; additional conditions must be met such as publications and other creative work;
- in addition to doctoral examinations, China has a unique mechanism to ensure the quality of doctoral education, which is the MOE's annual random sampling of doctoral dissertations submitted in the previous year.

Conclusions

Institutional differences in carrying out doctoral examinations indicate that Chinese institutions have autonomy to decide on important academic issues. But this can mean marked differences in the student experience of doctoral examinations between institutions. So, for example, a student pursuing a doctorate at a university using five examiners for dissertation evaluation might find the evaluation process more daunting than a student at another university that only uses two.

Examiners are appointed for different purposes during the doctoral process, and they are likely to be discrete groups of scholars. There is a question about whether this is all necessary and how it could be simplified and optimised. There may also be problems in finding dissertation examiners using databases rather than on the recommendations of supervisors' and candidates' because those in charge may not be in a position to find the best match.

As well, assistant professors are often not allowed to supervise doctoral students in the Chinese system. Given the criteria for examiners, assistant professors and academics in other categories rarely have the opportunity to participate in the doctoral examination process, except in the final oral defence when they may serve as secretaries. Early career academics are thus marginalised in the system.

China has a huge doctoral education and a complicated doctoral examination system. With quality control being the central concern in developing doctoral education, the country still has some way to go to make the system more robust.

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Notes

- 1 These HEIs include regular universities and adult colleges but exclude private colleges and research institutes.
- 2 This project aimed to improve the performance of China's best universities. It was named after the kick-off year (98) and month (5), and 39 universities were selected.

- 3 This project was launched in 2015 by China's State Council with the purpose of strengthening the international competitiveness of Chinese universities. 'Double' in the name refers to the ultimate goal of the project, which is to build world-class universities and world-class disciplines. In 2017, the Ministry of Education released a list of 42 universities and 456 disciplines in 95 universities as candidates for this project (Chen, 2020).
- 4 In China, 'Doctoral supervisor' had been an honorary title awarded only to full professors until 2003, when Peking University promoted an associate professor as a doctoral supervisor. Now associate professors may supervise doctoral students but assistant professors usually do not (Zhao & Shen, 2011).

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4

EGYPT

Daniele Cantini

Introduction

Egypt awards the largest number of PhDs on the African continent. The first university, the private philanthropic Egyptian University, was established in 1908. But obtaining doctoral degrees abroad remained an established norm and, as a consequence, only six doctoral degrees were awarded between then and 1925 (Abbas, 2008; Reid, 1990). In that year, the Egyptian University became public, and the higher education system was expanded to become a key sector of the state's activities. This resulted in some growth in numbers and, in all, 847 PhDs (42 to women) were awarded in the next two decades or so. After the revolution in 1952, higher education was expanded, and numbers grew rapidly. By 1969/1970 there were 1,200 enrolled PhD students at Cairo University alone (Cantini, 2021).

Subsequently, despite what many see as an educational sector in perpetual crisis because of underfunding, excessive numbers, and lack of resources, the rapid growth of students, staff, and institutions has continued unabated. In 2011–2016, the latest period for which statistics are available, the total reached 37,519 (15,284 of whom, roughly 40%, females). Between 2011 and 2013, graduations averaged just over 4,000 a year, and then jumped to over 7,000 in 2014–2015 and 9,016 in 2016 before falling to 7,656 in 2017 (Central Agency for Public Mobilisation and Statistics [CAPMAS], 2021). These figures include many international students; while Egypt sends postgraduate students abroad, it is also a major receiving country, particularly for students from African, Arab, and Muslim-majority countries.

The national framework for doctoral examination

Oversight of the Egyptian system of higher education, including doctoral programmes, is within the remit of the Ministry of Higher Education (MOHE), which delegates responsibility to the Supreme Council of Universities (SCU).

This was originally established in 1950 by Royal Decree No. (496) to ensure consistency in terms of curricula, examinations, scientific degrees, equivalent foreign certificates, academic promotions, and other matters. The SCU provides accreditation to both public and private universities that offer doctoral programmes. Institutions largely depend on the SCU for funding although there are some international, fee-based doctoral programmes at some public universities.

Within faculties, doctoral programmes are directly organised by the relevant academic departments within each faculty. Deputy-deans for postgraduate programmes and research head a committee that oversees all doctoral programmes at the faculty level, and is responsible for admission approvals. At the university level, there is a Vice-President for postgraduate affairs who similarly heads a committee coordinating doctoral programmes across the institution, composed of all deans responsible for postgraduate programmes (Technopolis Group, 2010). Universities individually determine their PhD enrolment rates in line with their estimated needs and capacities. General admission requirements include having a Master's Degree, a language certificate in at least one foreign language, normally English, a Certificate of Basic Computer Skills, and Academic Writing Courses (European Commission, 2017).

Definitions, structure of the doctorate, and its assessment

Article 92 of the Executive Bylaw of the Organisational Law of the University for Postgraduate Studies (hence EBOLU) defines a PhD degree as 'based on presenting a creative research for a period of minimum two years that ends with submitting a thesis accepted by the jury. The student may be assigned some advanced studies, in accordance with the regulations of the internal bylaw' (Cairo University, 2015, p. 242). The advanced studies are credit-rated, and vary according to disciplines and programmes, but normally include courses in research methodology as well as advanced seminars.

Doctoral students undergo annual assessment of their progress. The first stage is that supervisors report on students' progress every year to the department council, which in turn refers them to the faculty council for a further report which goes to the university council of postgraduate studies. If this indicates unsatisfactory progress, the university council can cancel the student's enrolment.

At the second stage, candidates must present their draft theses in a public seminar, normally held at a departmental level. This is the only occasion prior to the examination in which the quality of the thesis is evaluated other than by the supervisors.

The structure of doctoral examination

Doctoral examinations in Egypt are dependent on the presentation of a thesis, which since a recent reform cannot be longer than 120 pages. This was meant to encourage concise writing, but has been heavily criticised for being inadequate

for the scope of presenting original research (Dessouqi, 2021). Besides the monograph, the examination also consists of an oral examination where the thesis is defended in front of a commission.

A recent innovation has been the introduction of a publication requirement for PhD students: each student must publish two articles in a peer-reviewed scientific journal. These are normally journals published in Egypt, occasionally by the faculties themselves, and have a very limited circulation if any at all; yet, the pressure to publish in English is mounting, and different sorts of journals are entering the market to meet the need for quick publications.

Making submissions for examination

The decision of when a thesis is ready to be submitted for defence rests with the supervisor, who presents a report to the department council concerning the eligibility of the thesis for discussion, and makes a recommendation to form an examination committee which is known as the jury. No submission is possible without the agreement of the supervisor(s), even if this is conditional or with reservations.

Nomination of examiners

Examiners are nominated by the supervisors. The composition of the examination committee, known as a jury, has to be approved by the Vice President of the University for Postgraduate Studies and Research (art. 104). In practice, however, supervisors have the *de facto* power to appoint the jury, since other bodies will normally not go against their recommendations. A typical jury is composed of the supervisor (or by the senior and junior supervisors if there is a team), a faculty member, and an external examiner. The latter may be from another institution in Egypt or be based abroad if that is appropriate to examine the thesis. The formal head of the jury is chosen for his or her seniority. While the actual relations within the jury may vary, the most powerful 'actor' is the (senior) supervisor, who has almost full control on all phases of the doctoral journey, from the admission through the programme to the oral defence.

There is no hard data on how senior supervisors choose examiners, only anecdotal evidence from personal interviews, which for obvious reasons are normally off the record. But this suggests that supervisors normally make sure that only friendly or favourable colleagues are appointed as members of the jury, or at least this is how PhD students perceive the process. 'Every professor calls in the supervisors who'll help their students get the highest grades [...] they want their students to do well; moreover, the defences are full of comments that make you feel the professors didn't read carefully. Some do, but all that comes out is comments on things like punctuation and minor spelling errors' (Dessouqi, 2021, p. 62).

Once nominated by supervisors, examiners have to be approved by the institution. At Cairo University, this is done by the university council in the person of the Vice-President of the University for Postgraduate Studies and Research.

The examination

Once their theses have been cleared for submission, doctoral students have to print them out and physically bring copies to the members of the jury. Members of the jury then read the thesis, and they are required to write reports, but these are not made available to students prior to the oral examination, i.e., they have no feedback upon which to base their defence.

Oral examinations are held in public, with colleagues of the student and family members normally attending. As in the rest of the world, the COVID-19 pandemic has greatly affected the possibility of public gatherings. While my research on doctoral studies in Egypt (Cantini, 2021) was concluded before the outbreak of the pandemic, the evidence I collected from different colleagues suggests that, at the beginning of the pandemic a very small number of viva were held online, but quickly returned to being held on university campuses. There, they were subject to the precautionary measures of distancing and mask-wearing, while the number of attendees was reduced to a maximum of five in addition to the jury and the candidate.

The format of the viva is fairly standard across Egyptian institutions, with a presentation followed by questions to the candidate, who then responds. Typically, a viva lasts between two and three hours, at times more. When examiners feel that they have heard enough to make a judgement, the candidate is asked to leave the room. The jury then deliberates on the grade. Grades are excellent (*imtiyaz*), very good (*gayyed giddan*), good (*gayyed*), pass (*maqoul*), revise and resubmit, and failure. The final grade takes into account both the written thesis and the oral defence.

Once the grade is decided, the candidate is invited back into the room and informed of the examiners' recommendation to the institution. The jury then presents a joint report which goes to the faculty committee of postgraduate studies, then to the faculty council, and finally to the university council (art. 105).

The failure rate is comparatively low and theses are usually passed or, if not, students are allowed to re-submit, usually in six months time. In these cases, a new jury is formed for the second (and final) attempt.

Summary of key points

- supervisors have the key role in assessing student progress during the programme;
- supervisors ultimately decide when to allow the thesis to be submitted;
- supervisors are members of the jury who examine the thesis and the candidate;

- supervisors are responsible for nominating other members of the examination committee;
- examiners write reports prior to the viva, but these are not made available to students;
- vivas are held in public, one member of the jury is external to the faculty, one internal, and the third is the supervisor (or both if there are two);
- awards are graded from 'excellent' to 'pass' with options to re-submit or fail.

Conclusions

The central feature of doctoral assessment and examination in Egypt is the key role played by supervisors in all aspects of the process. As noted earlier, they; assess progress; decide when the thesis is ready for submission; act as examiners; de facto appoint other members of the jury, seemingly often from those most likely to award the highest grades; and, perhaps reflecting their influence, failure is comparatively rare.

Note that it would be quite misleading to regard the Egyptian case as untypical. Both historically, and in many cases even today, supervisors in many countries have played, or indeed are playing comparably powerful roles in doctoral examination. This includes many in the northern hemisphere; so, for example, in Germany in most cases the supervisor remains the senior examiner with a major role in nominating the others, and it was only in 2016 that France abolished the right of supervisors to be voting members of juries.

However, it may be noted that the reform of doctoral education is in the air, reflecting the increased insertion of Egypt into regional and interregional markets for postgraduates and a growth of international collaboration (Mills, 2021). These have already led to innovations such as credit-bearing courses and the introduction of publication requirements, and in future the spotlight may turn upon doctoral education.

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5

FRANCE

Pierre Batteau

Introduction

Doctoral degrees in France are officially awarded by four sets of institutions, namely:

- i. public universities, and some '*grandes écoles*' (the French elite higher education system);
- ii. nationally accredited research units ('*unité de recherche*'), in short the 'lab', where the students perform their doctoral research under supervision;
- iii. doctoral schools (*écoles doctorales*), defined for a given 'doctorate field' aggregating several related disciplines and normally including a set of designated labs. The doctoral schools are generally inside a university but they require separate national accreditation. In large universities with many fields, the doctoral schools form a 'doctoral collegium';
- iv. private institutions which award their own doctorates (for instance, the Institut Européen d'Administration des Affaires) but in 2019 these accounted for only a small proportion of the 14,000 doctorates awarded.

This chapter considers the national framework, submission and authorisation, pre-examination, the appointment of examiners, the oral defence, and the outcomes of doctoral examination.

The national framework

The French educational system has a long tradition of centralisation since the beginning of the 19th century. Every act of education in the vastly dominant public system is performed according to laws enacted by the parliament and

implemented through a wide variety of decrees and orders issued by both the ‘Ministry of National Education’ and the ‘Ministry of Higher Education, Research, and Innovation’. In the case of doctoral education, the framework is set out in a 17-page legal text, hereinafter referred as the MO2016.

A typical doctoral student starts with submitting a doctoral research project in a specified discipline, either on his/her own or in response to calls for projects issued by a lab. If accepted, the candidate is enrolled as a ‘doctoral student’ in the doctoral school attached to the lab for this field. The main supervisor is formally appointed after checking that she/he meets the official requirements, in particular, not exceeding the maximum number of supervisees allowed. A co-supervisor can be designated, not necessarily in the same lab, or even university (particularly to facilitate interdisciplinary work). The doctoral school also appoints an individual monitoring committee (*‘comité individuel de suivi’* (Article 13 of MO2016) for the student. This committee is a recent innovation (2018) and its role is entirely monitoring and not supervision. This innovation has been controversial and criticised for being a Trojan horse introduced in the school to supervise the supervisors or control their tasks (for instance, the committee could be composed with representatives of unions of the university non-teaching staff, who are quite strong in certain universities). But others see it as a positive development to provide assistance and protection to the students all along the doctoral journey. Nonetheless, this innovation is a sign of the weakening of the French traditionally strong power of supervisors, called in French *‘Directeur or Directrice de thèse’*.

According to the post-Bologna 3–5–8 years (Bachelor, Master, and Doctorate) higher education European system – common in most EU countries, the formal duration of doctoral preparation is three years after a Master’s degree, and official scholarships are offered for this period. Every year registration is subject to the approbation of the supervisor and the school after an assessment of the progress of the student’s work. On average, according to reports of the compulsory evaluation of doctoral schools (see in references the website address of the National Committee for Evaluation of Higher Education), 50% of doctorates are completed in four years or less with significant differences between the natural and social sciences.

The examination process is entirely organised under the umbrella of the doctoral school which has some degree of freedom to organise the course of doctoral preparation provided it stays within the framework of the MO2016 legal text. These procedures are summarised in the following section which also comments upon the actual practices and their evolution.

Submission and authorisation

The official text defines the doctorate as a grade normally conferred on the presentation of an ‘original scientific work leading to the advancement of knowledge in at least one scientific discipline’. This work is presented in a single document

called a *'thèse'*. It is always a written document defended before a jury: it can be a one-piece dissertation or a set of collected essays or articles.

In some fields, for instance mathematics, the thesis can be sometimes short (less than 100 pages) and rely on a small set of reference works. In other fields, for instance in certain social sciences, the thesis can reach one thousand pages with several hundred references. In fact, in most cases, one or more publications have been achieved before the final completion, and in some disciplines, accepted publications are a pre-condition to submit.

The candidates have to get the green light from their supervisor to submit for defence. Conflicts may arise sometimes and are arbitrated by the director of the doctoral school with compulsory consultation of the *individual monitoring committee* mentioned earlier. Tougher disagreements can be settled through different appeal procedures and, eventually in a judicial court.

Pre-examination

In France, it is very rare for a thesis to be rejected after the viva, which of course is disastrous and humiliating for the candidate. Also, in many cases, the candidate's relatives attend the viva and may travel from distant countries to see their son or daughter's conferment of a doctorate and it is politically incorrect, if not diplomatically offensive, for a degree not to be awarded, although it happens in a few cases each year.

In order to avoid such an outcome, many doctoral schools have unofficially systematised the practice of a pre-examination procedure (called *'pré-soutenance'*) before the final examination. This may involve preliminary reports from reviewers of the thesis (see next section) and/or pre-defence sessions organised by schools and involving examination by committees mimicking the official jury from their own academic staff. This allows the correction of the most conspicuous flaws of the thesis before its full writing, and helps to prepare the candidate for a successful viva. Pre-defence is also a way to convince the student that the thesis is not yet in the proper shape and needs more work before submission for defence.

Review of the thesis

The authorisation for defence (*'autorisation de soutenance'*) requires preliminary evaluation of the thesis. Upon recommendation of the main supervisor, the director of the school appoints *at least* two reviewers (*rapporteurs*) whose names are communicated to the university vice-president of research for approbation. They must be professors or holders of the *'habilitation'* diploma. They must also be 'external'¹ to the university and the school, although some derogations are granted when there are no identified experts of the subject outside the university. Foreign reviewers can be proposed. The official text recognises also the legitimacy of non-academic persons with expertise and allows their designation, though in addition to the academic reviewers.²

Each reviewer provides a report (at the latest two weeks before the viva date), which is concluded by acceptance or refusal of the thesis, possibly including requests for modifications. The reports are immediately communicated to the candidate and the supervisors. In case of important disagreement among the reviewers, for instance a refusal by one of them, the director of the doctoral school communicates with them and tries to get some rewriting of the reports with a conditional permission. If this fails, the director can postpone the viva *sine die* and discuss what to do with the supervisor and the candidate. One possibility is to appoint additional reviewers to get at least two positive reviews. At the end of the day, the director of the doctoral school has to make a decision and the ‘*autorisation de soutenance*’ has to be officially pronounced by the President of the university. There is a minimum period of fifteen days required between this communication and the defence itself, to allow the candidate to proceed with the required modifications proposed in the reports and to inform the academic community of the defence date and location.

In the past, reviewers were automatically members of the examination committee or jury but, since 2006, it has not been a requirement. This rule reversed a long-lasting practice but had the advantages of facilitating the evaluation of the thesis by foreign researchers and introducing more flexibility into procedures to compose and organise the jury.

The appointment of examiners

The oral defence is called ‘*soutenance*’ and is performed facing a committee called ‘*jury de thèse*’. It is very similar to the viva practiced in other national contexts. This defence is the sole official examination procedure to get a doctorate. While the doctoral schools can set additional conditions, they must not contradict MO2016 and they have examples of doctoral school practices overturned by a ‘*tribunal administratif*’³ because they violated the official text.

Once the authorisation is obtained, the jury members are determined by the director of the doctoral school with the help of the supervisor(s). In practice, they are very often selected together with the reviewers. The jury may include four to eight members. Half of them must be ‘external’ to the university. The jury should include at least half of its members with the status of ‘*professeur*’ or equivalent qualities also defined by Ministerial orders or decrees. A ‘balanced’ composition between men and women is recommended, which is never simple to achieve, for in certain disciplines women are rare while in some others it becomes difficult to find men to participate.

As well as satisfying the official rules, the composition of the jury may reflect the tacit interests of both the supervisor and the candidate. The former knows that the peers make inferences from the jury composition, and the latter knows that the jury composition can be interpreted as a signal of the quality of the thesis. Both are aware that a jury member might also some weeks later sit on a recruitment committee when the newly-qualified doctor is seeking an academic

position. There is a recent study (Bes et al., 2019, in French) of these relationships in the context of the composition of the jury.

The president of the jury is elected by its members. He or she must be a senior academic (*‘professeur’*, *‘directeur de recherche’*) and hold the ‘habilitation’, the higher doctorate in France equivalent to a DLitt or DSci elsewhere. While supervisors are allowed to sit on the jury, the most recent version of the MO2016 (revised 2018) excludes them from voting. This provision constitutes a rupture with a long-standing tradition and has been controversial among the community of academics involved in doctoral education. The official explanation for this change is conformity with international practice (for instance in the UK), in excluding the supervisor from taking part in the final decision while the critics rather see it as another sign of the weakening of the supervisor’s role, a trend underlying other articles of the MO2016 (see above and Batteau, 2020).

The student may be consulted about the choice of the reviewers and jury members, in particular in advising where the dissertation has referred to the latter’s own publications and where there may be a potential for bias. But ultimately the committee composition is determined by the supervisor and the director of the doctoral school subject to the approval of the university president (or the vice-president for research). The latter can reject a jury member for a justified reason, although this may be appealed before a *‘tribunal administratif’*.

The selection of examiners is more complicated for a category of theses called *‘cotutelles’*, involving the joint award of a French and a foreign doctorate. The examiners’ list is composed according to a convention between the French institution and the foreign one and sometimes, the approbation requires up to twelve signatures or more to be valid.

The oral defence

Traditionally, the defence takes place in a classroom of the university or in a dedicated seminar room called *‘salle de thèses’*. It is always open and access is therefore public. Some theses are defended in a huge amphitheatre with literally hundreds of spectators, while others are attended only by the jury members. The session generally includes a presentation by the candidate (20–45 minutes) followed by the reviewers’ reports and questions for the candidate to which they respond. The rest of the time is taken up with other questions and debates between the jury and the candidate. In contrast to some other systems, the audience is not allowed to ask questions or otherwise participate. The oral examination generally is performed in two to four hours, although the author of this chapter has personally attended a thesis defence (in History) lasting eight hours with two breaks. After the session, the jury retires behind closed doors; its deliberations usually lasts between 10 and 45 minutes. Then the jury returns, the candidate and audience stand, and the result is immediately and solemnly proclaimed.

Of course, this process has been affected by the COVID pandemic. The MO2016 text allows the president of the university to authorise virtual sessions

for defences and deliberations, although it notes that it should be considered as 'exceptional'. This means that, in spite of the availability of online tools, universities have preferred to stick to the tradition of Plato's Academy in Athens, where speakers had to stand at voice reach in a dedicated place to teach or debate.

Examination outcomes

Until recently, the jury attributed grades to the thesis in the form of 'mentions', namely '*honorable*', '*très honorable*', and '*très honorable avec "félicitations" du jury*'. However, the increasing competition for academic positions had progressively led to unanimous *félicitations* for virtually everybody in certain disciplines and under MO2016 grading was abolished and the outcomes are now pass or fail.

While some defences do give rise to controversial scientific debates with tough criticism, on most occasions the viva is a conventional exercise with *figures obligées*: for the jury members, after introductory words of politeness and mutual flattery, the event is an opportunity to exchange views among experts who are sometimes friends or sometimes rivals. On occasion, jury members can abuse their right to speak by seeking to expose the errors of rivals or defending their own work rather than questioning the candidate on their thesis. For candidates, the viva can be exhausting and emotional but it is also symbolic in hopefully marking the last step at the gate of a new social status. They, and their friends and relatives, are only impatient to hear the solemn sentence:

'le Jury vous décerne le grade de Docteur es-science de...' (The jury confers upon you the grade of Doctor of sciences of...discipline.), after which they rush to say '*Félicitations Docteur XXX*', before moving to the party room and socialise with cookies and drinks in hands.

Post-examination

After the *soutenance*, the jury president writes the official 'final report', a very important document since it will be required for future applications for academic positions. The report form may vary widely: some reports are just a one-page description of the steps of the defence with the final decision of the jury. Other reports are more detailed and provide a summary of the strengths and weaknesses of the work. Other reports integrate the preliminary reports to give a more detailed picture of the evaluation of the thesis.

In France, it is a requirement that the report is submitted if subsequently applying for academic posts. Here, the form and phrasing of the document can send subtle favourable or unfavourable signals to the recruiters, and often, the old 'mentions' are surreptitiously reintroduced in the text. In some disciplines, the content of the report and the status of the reviewers are major considerations in the appointment process, whereas in others weight is attached to prior publications.

Summary of key points

- there is a uniform national framework for the research doctorate defined by Ministerial Orders;
- doctoral studies involve the pre-requisite of a Master's degree followed by enrolment in an accredited research lab and a doctoral school within a university or a public higher education institution;
- doctoral submission depends on the agreement of the supervisor(s);
- in addition, there may also be a pre-defence prior to the formal examination;
- the examination consists of two parts, a review of the thesis by external experts and an oral examination by a jury;
- the jury has four to eight members of whom half are professors or equivalent and half external. The supervisor sits in on the jury but has no voting right;
- the viva is open and lasts two to three hours followed by closed-door jury deliberation and immediate proclamation of the result;
- rejection is very rare because of preliminary reviewing and pre-defence-sessions imposed by the doctoral school;
- since 2016, the doctorate has not been graded.

Possible evolution of the doctoral examination

Currently, the defence is still the sole formal examination leading to the conferral of a doctorate. However, this is changing as doctoral schools increasingly prescribe additional coursework requirements for students (irrespective of the views of supervisors) and make them a condition for registration in the next year or in order to gain permission to submit. Therefore, a possible evolution, already suggested in the last version of the MO2016, is to link the granting of the doctorate to a set of examination with grades or pass mentions, obtained in a '*portfolio*' (word used in the MO2016 text) of activities. So, the final thesis would only be part of doctoral examination for the award of the degree. In other words, passing the thesis would be '*in partial fulfillment for the doctorate of...*'.

Further consideration could arise from the evolution of the doctorate itself in France. Traditionally, for employment purposes, both the public and private sectors in France have valued the two-plus-three years diploma of the '*grande écoles*' more than a three-plus-two-plus three years doctorate, which has only appealed to niche markets, including of course academia. But there, of course, there is already the higher doctorate, the *habilitation*, which has tended to become the gold standard for academic careers.

In response, it is possible that the doctorate could evolve at least partly towards a 'super masters' degree or a professional doctorate, one less costly to produce with more standardised procedures during three years, and intermediate degrees after one or two years, and possibly without defence (the so-called ABD, All but Dissertation, in the US). That said, there may be resistance because the French academic doctorate has always attracted international students within Europe and

from countries without advanced systems of doctoral education. However, this attractiveness is under question because of the decline of doctorates in Europe since 2010, and the correlative rise of doctoral programmes in many countries on all continents (Cyranoski et al., 2011).

Notes

- 1 University professors are civil servants and their official title is '*professeur des universités*' the plural makes clear that they are entitled to operate in any university. Being 'external' is then just a provisional status.
- 2 For instance, a member of the Supreme Court ('*Conseil Constitutionnel*') could be proposed for reporting on a Law thesis about the Constitution.
- 3 Any decision made by a public entity can always be challenged before two jurisdictions: '*tribunal administratif*' (lower level) and '*Conseil d'état*' (upper level).

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6

GERMANY

Barbara M. Kehm

Introduction

The first doctorate of a German university was awarded by Charles University in Prague in 1359. At that time, what are now Germany and the Czech Republic were part of the Holy Roman Empire. Throughout the Middle Ages and until the 17th century the title ‘Doctor’ was used interchangeably with the title ‘Magister’ (which was not at all the equivalent of today’s Master’s degree) and constituted the highest academic degree. A person with a doctoral (or ‘Magister’) degree had the right to teach at all occidental universities.

In Germany, only universities have the right to award doctoral degrees and no other type of higher education institution, although this rule is eroding somewhat (see final section). And only academic staff in a professorial position are allowed to accept doctoral candidates and supervise them. In 2020, there were about 130 German universities awarding doctoral degrees and about 33,500 professors having the right to supervise doctoral candidates (Destatis, 2021).

German universities have traditionally produced a relatively high number of doctoral degrees. In 2020, altogether 26,220 doctoral examinations were carried out of which 20,900 ended successfully with the award of the title. The proportion of women being awarded a doctoral degree was 45.5% in the same year and the proportion of foreign candidates was 25.5%.

In the following, this chapter considers the general framework conditions of doctoral education in Germany, the basic principles of doctoral examinations, and discuss recent reforms of doctoral education which have led to a differentiation of types of doctorates affecting to some extent also the forms of examinations. These new developments will be summarised and framed in eight points in the conclusions.

General framework conditions

The German system of doctoral education and training as well as the principles of doctoral examinations differ considerably from what are commonly known as the British or the American models. First and foremost, young people in the process of getting their doctorate are not considered to be students. Therefore, it is preferable to characterise them as candidates rather than students. As a rule, admission into a doctoral programme or acceptance as a doctoral candidate by a professor requires a Master's degree. The proportion of Master's graduates who proceed into doctoral work is about 20%, however, with large variations between subjects. Graduates embarking on a doctoral degree are regarded as having finished their studies and a majority of them (about 60%) are young members of the academic staff who have a contract and receive a salary. They are thus considered to be junior researchers or early career researchers. Accordingly, they are also not required to do any further course work. Typically, some courses for doctoral candidates are offered, especially in the framework of doctoral programmes or graduate schools but participation is voluntary.

Traditionally, doctoral education and training in Germany was, and still is to a considerable extent, characterised by the so-called 'Master-apprentice model' meaning that doctoral candidates have a rather close relationship to their supervisors, called 'doctor-father' or 'doctor-mother'. Often doctoral candidates are working for their supervisors as teaching or research assistants. Supervision is individual and not necessarily integrated into doctoral programmes or graduate schools. However, with the inclusion of doctoral education into the Bologna Reform process more structured doctoral training was called for in Germany and although some doctoral schools and programmes existed already, all doctoral training is now supposed to be integrated into more formal programmes or schools (for more detail see below). This has led to the situation that Germany currently has dual systems of doctoral education and training (individual supervision and programme or school led) exist in parallel.

Germany is a federal country and each of the 16 states is responsible for the funding and regulation of all public higher education institutions located on its territory. The Federal Government has a Ministry for Education and Research and in terms of higher education is responsible for the general principles on which the system is based in order to guarantee a certain amount of legal homogeneity and equality of opportunity. Furthermore, the Federal Ministry is involved in research funding. As doctoral education and training is considered to be an academic affair, the Federal Ministry is not involved in its direct regulation but frequently in its various forms of funding. The individual states determine which institutions are allowed to award doctoral degrees. And in this respect, a certain erosion of previous regulations can be observed. By now there are two or three private (but state-recognised) universities, which are allowed to award doctoral degrees as well as – in some states only and only under certain conditions – some of the more research-intensive universities of applied sciences (for further detail see below).

At the institutional level, each university department is autonomous in setting up the general rules and requirements for getting a doctoral degree. The departments have to adhere to the general principles and framework conditions but they can determine the possible forms of examinations, the types of doctoral degrees (for example, quite a number of departments exclude a PhD by published work), and the requirements needed to become eligible for doctoral work and for submitting the thesis. They can also determine whether any foreign language knowledge is required (for example, in some cases advanced knowledge of Latin is still required in the humanities) and the form of thesis publication (monograph or journal article). Over the last 10–15 years, Germany has basically seen a differentiation in the types of doctoral degrees awarded.

Despite the fact that universities have been asked by the responsible Federal Ministry to put into place some type of system for registering doctoral candidates such a system has not yet been fully established. Therefore, it is unknown in Germany how many young people are actually in the process of getting a doctoral degree. So far, only one attempt has been made to estimate the number of doctoral candidates in the process of getting their degrees. The survey was carried out in 2014/2015 and resulted in an estimate of almost 200,000 candidates (Destatis, 2016). The only reliable statistical figure is the number of doctoral examinations that have been carried out every year. This also means that there is no reliable information about drop-out from doctoral training, which is considered to be rather high. Despite this lack of information, Germany is among those countries globally with the highest number of doctoral degrees awarded annually in relation to the size of its system.

The selection and recruitment of doctoral candidates are very individual. As a rule, each professor – and only university professors are allowed to accept and supervise doctoral candidates – has one or more positions for research and teaching assistants as part of his or her professorial chair and can add to this number by creating further doctoral positions within the framework of third-party funded projects. The average number of supervisions per professor is six but varies between an average of eleven in Engineering and five in the Humanities (Destatis, 2016: 22).

Typically, there are three types of doctoral candidates. The first type constituting the majority (about 60%) are those who are employed on part-time contracts as junior academic staff. The second type are those who receive a scholarship from one of the numerous foundations (about 30%), and the third type are those who are called ‘externals’ meaning they are self-funded. The second and third types of doctoral candidates do not have a proper status vis-à-vis the university, although they often continue to be enrolled as students (Burkhardt, 2008).

The reform process to create a European Higher Education Area (called the Bologna Process) which was introduced at the European level at the end of the 1990s not only created the two-tiered system of Bachelor and Master level studies which did not exist in Germany before, but it also led to a reform of doctoral education and training. The underlying intention was to give this process

of qualification more structure and establish doctoral programmes or graduate schools. A few graduate schools had existed at universities before that time, mostly funded by the national research funding organisation or by one of the many private foundations. With the new push for programmes or schools, the number of scholarships for doctoral candidates also increased. In addition, the German Excellence Initiative which also funded graduate schools at universities multiplied the number of scholarships for doctoral education and training (Kehm, 2009; Kehm & Pasternack, 2009). In doctoral programmes or graduate schools, supervision is often shared among two or more professors. Furthermore, graduate schools and doctoral programmes offer courses or workshops for the doctoral candidates. Participation in such courses and workshops tends to be obligatory in graduate schools and more voluntary in doctoral programmes.

In Germany, there is no (terminological) distinction between research doctorates and professional doctorates as is the case in most Anglo-American countries, all doctorates are considered to be research doctorates, which is related to the fact that until very recently only universities were allowed to award doctoral degrees. In reality, there are of course certain doctorates that tend to be more applied or professional. This is particularly the case in the field of medicine and often in engineering where there is a form of industrial doctorate which tries to find research-based solutions for issues in the research and development departments of large companies.

Principles of doctoral examinations

Although the process and the requirements for being awarded a doctoral degree in Germany have changed somewhat over time, the main principles have remained the same: for a doctoral degree, a candidate has to prove his or her capability to carry out scholarly or scientific work by submitting an independent dissertation, i.e., a piece of written work that they have produced without the help of others, and passing an oral examination (nowadays, a summary and defence of the main theses, approaches and research findings of the dissertation). Upon successful completion of the examination, the examiners have to give their permission for the publication of the dissertation and may make this dependent on revisions. In the humanities and social sciences, the rule is still a publication in form of a monograph, in the natural sciences and engineering it will be typically journal articles. Candidates are allowed to use their doctoral degree as a title and as a pre-nominal only after publications. In Germany as well as in some other continental European countries, the thesis and the oral doctoral examination are graded separately. Both grades are then combined into one final grade which is issued in Latin (Kehm, 2020a). There are altogether four different grades possible: *summa cum laude* (with highest honours), *cum laude* (with honours), *laude* (good), and *rite* (sufficient).

The first step in the assessment process is the evaluation of the written work called thesis or dissertation. A unique feature in the German tradition of doctoral

examinations compared with many countries around the world is the fact that the main supervisor is also the main examiner who grades the thesis and chairs the commission, which is put together for the oral examination. Doctoral theses are reviewed and graded by the supervising professor and a second professor selected by the supervisor. Typically, the second reviewer is a professor of the same university. Only in rare cases will he or she be from another German university or even from a university abroad. The thesis or dissertation is assessed along the criteria of quality, originality, and contribution to the body of knowledge in a given subject or field. The grade awarded by the supervisor has clearly more weight but the second reviewer is supposed to make an independent assessment of the thesis and give it a grade as well. The grades of both of these two reviewers are accompanied by written assessments pointing out the strengths and weaknesses of the dissertation. The two grades are then combined to make up the final grade of the thesis.

After the thesis has been assessed and graded the second step of the examination begins by forming a commission for the oral examination or defence. Members of this commission are also at the professorial level. Again, the supervisor has the most important role and proposes potential members of the commission. He or she will typically select professorial colleagues who are familiar with the field in which the thesis has been produced. The second reviewer of the thesis is always part of the commission, the other members can be colleagues from the same or a different university, sometimes also international colleagues. As a rule, the commission has four or five members. Some departments have established a few criteria for the selection of the commission members, e.g., that at least one member must be from a university abroad or from a different university, but generally the selection remains in the hand of the supervisor. All commission members will receive a copy of the thesis and the two assessments beforehand and are expected to familiarise themselves with the thesis and the assessments before the oral examination takes place.

Oral doctoral examinations are public. After the announcement of a date and a time other members of the university can come and listen. The candidate can also invite friends and family members to be present. However, no active participation or intervention by the audience is allowed. The interaction is solely between the candidate and the members of the commission. First, it is the task of the candidate to provide a summary of his or her thesis (topic, theory, methods, and results). The second part of the oral examination consists of questions and comments issued by the commission members to which the candidate has to react. There can also be an exchange of critical arguments. The goal of the oral examination is for the candidate to demonstrate that he or she can carry a scientific or scholarly argument with other experts in his or her field even if there are adverse opinions on this or that issue. It is basically a 'rite of passage' with the commission members representing the 'gate keepers' and deciding in the end whether the candidate is good enough to merit admission into a scientific or scholarly community. Typically, an oral examination will last for one and a half to two hours.

At the end of the examination, the candidate as well as the audience are sent out of the room so that the examination commission can discuss the candidate's performance and decide about the overall degree. The candidate and the audience are then called back into the room and the candidate is informed of the result. During the secret consultation of the commission members, the merits and weaknesses of the oral examination are pointed out again and the assessments and grades of the thesis are taken into account. The commission has the right to make recommendations for revision before publication which the candidate has to follow.

In many universities and departments, there are certain traditions, which are adhered to afterwards. These differ from university to university and are typically linked to some kind of local tradition. Usually, the candidate offers a round of drinks and some snacks to the commission members and the audience after the announcement of the final result. But there are additional traditions in some universities. Just to provide an example: successful doctoral candidates who have just undergone their oral examination at the University of Göttingen go, together with their families and friends, to the market place in the city centre where there is a bronze sculpture of a girl herding geese. The tradition is that the successful candidate has to climb up to the sculpture and kiss the girl. Other traditions can be found at other universities but dominantly at the old ones which were established from the Middle Ages onwards until the end of the 19th century and the beginning of the 20th century. Most of the younger universities founded after the Second World War do not have such traditions.

After an administrative process at the university awarding the degree, an official certificate is issued and handed over to the successful candidate providing information about the successful completion of the doctorate, the topic of the thesis, and the overall grade.

Differentiation of doctoral types and their forms of examination

As has been indicated earlier the types of doctoral degrees in Germany have diversified over time. Despite the fact that the basic principles of the doctoral examination have remained the same (i.e., submission of a written piece of work, oral examination), the diversification has affected the traditional education and training process and the ways in which the thesis or dissertation is produced (Kehm, 2020b). What has been described in this chapter so far is the traditional type of research doctorate and despite the fact that professional doctorates do exist in some subjects in Germany (e.g., in medicine), all doctorates continue to be regarded as research based and there is no terminological distinction.

The 'PhD by published work' has existed in Germany since the 19th century and is called a 'cumulative dissertation'. It is based on the submission of a thesis consisting of three or four previously published journal articles framed by a text that is supposed to provide a certain degree of research coherence in a given field or specialisation. Thus, the piece of written work which is assessed and graded is

somewhat different from a typical thesis and research coherence is an additional criterion of the evaluation.

The cooperative doctorate is a German model in which professors of universities and professors of universities of applied sciences (most of the latter do not have the right to award doctoral degrees) jointly supervise a doctoral candidate who originally graduated from a university of applied sciences. Such a dissertation will be more application-oriented so that the character of the thesis is different. Typically, the professor of the university of applied sciences who is co-supervising will also be a member of the commission for the oral defence. However, university professors strongly guard the idea of a doctoral thesis having to be research-based so that the more applied character of theses in the cooperative doctorate is strongly weighed against its grounding in research. As a rule, this implies two things: First, the candidates are often encouraged to take additional courses in theory and methodology while working on their dissertation, and second, they have to make an extra effort in their thesis as well as during their oral examination to prove their theoretical framework or grounding.

Finally, there is the industrial doctorate which is mostly awarded in the engineering fields and also a rather applied degree. The research work of the candidate is carried out in the R&D department of a company and is oriented towards the research-based solution of a particular problem or issue of the company. The research work is jointly supervised by a university professor and a senior engineer of the company. Typically, the possibility for undergoing an industrial doctorate is based on an agreement between the university and the company. The senior engineer co-supervising the candidate is then included as a member of the commission that is formed for the oral defence. Implications for the candidate are similar to those indicated earlier for the cooperative doctorate.

A last issue needs to be mentioned here. For a long time, German universities have defended their exclusive right to award doctoral degrees with the argument that they are the only type of higher education institution which provides a clearly academic education and a research-based doctoral training. Over the years, however, this monopoly has been contested by two other institutions. First, by some universities of applied sciences which have developed – at least in some of their subjects – a more research oriented though still applied or professional approach. They have claimed the right to award doctoral degrees on their own and independent of a university. In the meantime, two German states, namely Baden-Wuerttemberg and Hesse, have granted the right to award doctoral degrees to some of their universities of applied sciences in subjects in which these institutions have a strong and clearly recognised research portfolio. Upon application to the respective state ministry and a detailed evaluation process of the intensity and quality of research the right to award doctoral degrees can be granted. Second, by the Max Planck Institutes. The Max Planck Society consists of 86 basic research institutes and is Germany's leading extra-university research organisation. Many of the institutes have established doctoral training schools to educate and train their junior research staff. In recent years their claim to be given

the right to award doctoral degrees independently has become louder. Until now they have not been granted this right. Instead, the usual arrangement is that the research directors of the Max Planck Institutes have an honorary professorial position at a university and in this capacity can carry out doctoral examinations. The degree though continues to be awarded by the respective university.

Summary

The most important points made in this chapter are:

- generally, only universities are allowed to award doctoral degrees in Germany and only university professors are allowed to accept, supervise, and examine doctoral candidates;
- doctoral candidates are not considered to be students. The majority of them (about 60%) are employed by their university as junior academic staff or research assistants. Accordingly, no course work is required;
- the traditional German model of a master-apprentice relationship between supervisor and doctoral candidate is eroding because of the growing integration of doctoral education and training into programmes and schools;
- within the framework of a few general principles which haven't changed much over time, university departments are autonomous in setting up the rules, regulations, and requirements for doctoral degree awards;
- doctoral examinations require the submission of a thesis and passing an oral examination in which the main research results are presented by the candidate and afterwards defended in front of a professorial examination committee. To carry the title, the thesis must be published;
- the thesis and oral examination are graded separately and then combined into an overall grade;
- the thesis is evaluated and graded separately by two professors one of whom is the supervisor;
- the oral examination is public and, thus, opened for a wider audience. However, only the professorial examination committee is allowed to interact with the candidate and ask questions in the framework of the defence;
- current critical debates of doctoral examinations are focusing on the influential role of the supervisor, trends towards grade inflation, and the demands of institutions other than universities to be allowed to award doctoral degrees independently;
- recent research has also shown a trend towards a diversification of types of doctoral degrees.

Conclusions

In conclusion it is possible to say that the basic principles of doctoral examinations in Germany have not changed. The two main elements – submission of an independent piece of research work and defence of the thesis – have remained

the same. Even the COVID-19 pandemic did not alter this 'rite of passage' into a scientific community other than the oral defence being shifted to online video conferencing. What has changed considerably is the increased attention that is being paid to a more systematic research training involved in the process of getting the degree. This change has basically shifted the previous emphasis on the 'product' (quality of the dissertation) to an emphasis on the 'process' of educating and training young researchers.

However, there are currently ongoing and rather critical debates in Germany about the relatively high degree of dependency of candidates on their 'doctor father' or 'doctor mother' (i.e., their supervisors). Not only are the supervisors the first examiners of thesis and during the oral defence but they are also selecting the second reviewer and the members of the oral examination committee. In addition, we have to keep in mind, that in 60% of all cases the supervisor is also the immediate superior of the candidate because the candidate is working for him or her as a junior research and teaching assistant. This situation is naturally prone to favouritism and buddy systems of all kinds. Although it happens sometimes, it is rather rare that a candidate insists on changing his or her supervisor. If the relationship between candidate and supervisor is not good it leads to a drop-out of the candidate more often than not. It is hoped that the practice of having two or more supervisors which has been introduced widely in the framework of doctoral programmes and graduate schools will mitigate this problem.

Another issue of doctoral examinations that is causing critical debates is grade inflation. Over the years, those doctoral degrees having been graded with a 'summa cum laude' have clearly increased. A recent statistical analysis of the relevant figures (Adrian, 2020) showed that between 2016 and 2018, on average 15.9% of all doctoral examinations at German universities were graded with the highest possible grade (summa cum laude). The analysis also showed that the figures vary considerably by university and by subject (between 0% and almost 50%). Since 2001, the German Centre for Higher Education Research and Science Studies is annually collecting doctoral degree grades and analysing and presenting them statistically. The developments are thus, under observation but so far no measures have been taken, other than the proposition not to grade at all and award doctoral degrees just on the basis of a 'pass' assessment. This is closely related to the fact that doctoral education and training and doctoral examinations continue to be considered as an almost exclusive academic affair in which the professors have the right to be the gatekeepers and determine the conditions and circumstances under which doctoral examinations are carried out. This is also shown by the fact that university departments are free to determine their own conditions and regulations – within the basic framework described earlier – of doctoral examinations. These conditions and regulations are first and foremost shaped by disciplinary and possibly also organisational cultures. Thus, the German Centre for Higher Education Research and Science Studies which is observing and analysing the grade developments in doctoral examinations has explicitly stated that they have so far no explanation for the considerable differences among universities and subjects in awarding the highest possible grade.

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7

INDIA

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Introduction

The Doctor of Philosophy (PhD) is the highest academic degree awarded by universities and university-level institutions of higher education in India (see Jayaram, 2008; 2021; Jayaram et al., 2014).¹ In 2019–2020 of 1,043 degree-awarding institutions² for which data are available,³ 1,019 had enrolled 202,549 candidates in doctoral programmes and awarded 38,986 doctoral degrees (Ministry of Education, Government of India, 2020).

This chapter discusses the current procedures for the examination of doctoral thesis in India and the measures that have been undertaken to streamline, regulate, and improve it. It is based on an analysis of the national regulatory framework for the doctoral programme and the related regulations of 20 universities and university-level institutions of higher education.⁴

The national framework for doctoral examination

For 25 years after India became a republic in 1950, the states constituting the union of India legislated on matters relating to education. This resulted in enormous diversity in the university system between states and the quality of doctoral education was consequently uneven. In 1976, through the 42nd constitutional amendment, education was brought under the ‘concurrent list’, whereby both the union and the states could legislate on any aspect of education at all levels. Even so, because enrolment in doctoral education was less than 1% of the total enrolment in higher education, neither the Ministry of Education nor the University Grants Commission (UGC)⁵ paid much attention to it.

The unevenness and the general deterioration in the quality of doctorates over the decades and the criticism that it provoked in scholarly circles and the media finally prompted the UGC to formulate minimum standards and procedures for the award of research (MPhil and PhD) degrees in 2009. These standards and procedures were revised in 2016 (see University Grants Commission, 2016); with minor modifications, they are in force today.

The UGC regulations provide the national framework within which the universities offer doctoral programmes. With the universities adopting the UGC regulations (some even replicating them verbatim) inevitably there are considerable similarities among them in the examination of doctoral theses. However, reflecting the regional diversities in a vast country like India, and also the nuances of different subjects in which the doctoral programmes are offered, the universities are permitted to make appropriate rules and regulations, so there are differences as well.

Definitions of the doctorate and its assessment

The idea of what constitutes a doctorate is not explicitly defined in the UGC regulations. It is presumed that the doctorate degree is awarded to a candidate on the successful completion of an original research work. This work is embodied in a thesis, which is expected to be submitted 'within a reasonable time' and which is free from 'plagiarism' and which should 'not have been submitted for the award of any other degree/diploma of the same institution where the work was carried out, or to any other institution' (UGC, 2016). The modalities of determining and defining these criteria are left to the universities.

Most universities operating within these regulations also do not explicitly define the doctorate. The few universities that have elaborated on this, list some or all of the following criteria for a thesis to be awarded a doctorate, namely, that:

- a. it constitutes a contribution to knowledge characterised by the discovery of new facts, (re-) interpretation of known facts or theories, or development of new techniques or instruments;
- b. its reference material is up to date;
- c. it is based on a methodology that is sound;
- d. it must evidence the candidate's capacity for critical examination and sound judgement;
- e. its organisation is neat and literary presentation is lucid.

In institutes of national importance and central universities, the thesis is expected to be written in the English language. In almost all state universities, the thesis may be written either in English or in the official language(s) of the state. Generally, theses in the faculty of languages are written in the language that is being studied.

The structure of doctoral assessment and examination

In India, the definition of the doctorate almost exclusively applies to the PhD by thesis. There is no system of practice-led doctorates and only a small number of universities offer a DLitt degree based on an examination of a candidate's publications. Many universities confer an honorary doctorate in recognition of a person's outstanding contribution to a specific field of expertise.

The UGC regulations mandate all doctoral candidates to complete taught courses in the initial one or two semesters. While it is left up to the universities to decide on the number of credits (8–16), there must be at least one course on research methodology and other advanced-level courses designed to prepare candidates to embark on their doctoral research work. Successful completion of the course work is a prerequisite for the confirmation of the registration for the doctoral programme. However, the rigour with which the course work is carried out varies widely across universities.

On confirmation of the registration for the doctoral programme, a candidate's progress is monitored and assessed once every six months by a doctoral advisory committee. While the nomenclature and composition of this committee varies across universities, in most cases the supervisor is its convenor. Assessment at this stage is generally formative and the committee provides feedback on the candidate's progress report. If the candidate fails to submit two consecutive six-month progress reports or if the committee finds the progress to be continuously unsatisfactory, it may recommend the cancellation of the candidate's registration. However, this seldom happens, as most committees and universities are lenient and condone such lapses.

The UGC regulations expect the candidate to make a seminar presentation prior to thesis submission. In this seminar, called variously as pre-submission seminar, synopsis presentation, etc., the candidate outlines the research work carried out, the findings arrived at, and the organisation of the thesis. While the main audience of this seminar is the doctoral advisory committee, the UGC regulations expect it to be open to all faculty members and other research scholars, though in reality very few of them attend.

To ensure that the quality of the thesis is satisfactory and it merits publication, the UGC regulations stipulate that a doctoral candidate must publish at least one (in some universities, two) research paper(s) in a refereed journal and make two paper presentations in two separate conferences/seminars before thesis submission. This has inadvertently led to the proliferation of publications in online and predatory journals. To address this, in November 2019, the UGC instituted a 'Reference List of Quality Journals', called the 'UGC Care List'.⁶

Submitting the thesis for examination

Once these pre-submission requirements are completed and provided that the supervisor is satisfied with it, the candidate is permitted to submit the thesis for examination. The thesis must carry a declaration from the candidate and a

certificate from her/his supervisor attesting to the originality of the work and confirming that it has not been submitted for award of any other degree/diploma of any university or institution. It is expected that all sources used for the thesis are appropriately cited and acknowledged. Different universities have varying degrees of latitude as regards plagiarism; however, no university permits more than 25% on the similarity index, excluding reference materials like quotations and bibliography. A few universities expect the attachment to the thesis of a plagiarism test certificate issued by an appropriate agency of the university, e.g., library, computer centre, etc.

The UGC regulations, as also regulations of many universities, are silent on the physical aspects of a doctoral thesis. Most universities neither have a manual of style nor recommend any that are readily available on the Internet for preparing the thesis. The few universities which have a manual of style provide formatting specifications, which among others include the size of the thesis (the total number of pages or words), paper size, margins, line spacing, font face/size, etc.; in a few universities, some of these specifications appear as part of their regulations.

The number of hard copies of the thesis (three to six) to be submitted varies across universities; the candidate is also required to submit a few copies of the synopsis of the thesis. However, in view of the COVID-19 pandemic, almost all universities now accept soft copies of the thesis and its synopsis.

The UGC regulations stipulate a minimum of three years (including course work) and a maximum of six years for thesis submission. The maximum period is relaxed by two years for women candidates and persons with more than 40% disability. In addition, women candidates are entitled to 240 days of maternity or childcare leave once in the duration of their doctoral programme. Besides, some universities have introduced provisions for extension of the time limit up to seven years under extraordinary circumstances. However, a candidate re-registering for the programme is permitted to submit the thesis after the expiry of at least one calendar year from the date of re-registration provided the topic of the research is not substantially different from the one on which he/she had worked on earlier.

Criteria for the nomination of examiners

The UGC regulations stipulate that the doctoral thesis must be examined by the supervisor and two external examiners, i.e., those who are not in the employment of the university or college awarding the degree. The regulations are silent about the academic position of the examiners and the qualification and experience expected of them. Accordingly, there are wide variations in university regulations with regard to the thesis examiners.

Employment status

In most universities, the examiners have to be of the rank of university professor (including scientists and professionals), and either currently employed or retired,

from outside the university. In some cases, associated professors can be appointed as well. In some universities, former or retired professors from those institutions can be appointed as 'external' examiners.

Location

In most subjects, doctoral examiners work in universities in India. In some institutes of national importance and some central universities, the panel must include at least two or three examiners from India and two or three from outside the country. The inclusion of the names of 'foreign examiners' is necessary in a few state universities in some subjects like applied sciences, engineering and technology, life sciences, medicine, etc.), although they may not actually be appointed.

In a few universities, at least one external examiner appointed must be from outside the state in which the university is located, or in the case of Guru Nanak Dev University, Amritsar, from different zones of the country. This requirement, however, is relaxed in the case of theses written in regional languages, as it would be difficult to locate examiners for such theses from outside the state.

Qualifications

Although no academic qualification for examiners is explicitly mentioned in the UGC regulations, in practice all examiners will have doctorates as the latter is a mandatory qualification to be a professor or an associate professor. It is presumed that the examiners are experts in the field of specialisation of the thesis, but this is seldom checked. In extraordinary cases or in areas where examiners with a doctorate are not easily available, the vice-chancellor may use his discretionary power and appoint a non-doctorate holder as an examiner.

Independence and conflict of interest of the supervisor and candidate

While the UGC regulations state that the supervisor should be an examiner of the thesis, it noted that all of the institutes of national importance, central universities, and some state universities have done away with this requirement. So, while the supervisor is present at the viva, he or she plays no part in the deliberations of the examiners.

Many universities try to protect the integrity of the doctoral examination and treat all matters related to it as confidential. Neither the supervisor nor the head of the department is told the names of external examiners; they, in fact, are supposed to know this only after the examination reports are received. Anxious as they are, supervisors have their own way of circumventing this confidentiality in trying to influence the examiners. Anticipating this, some universities discourage any communication between supervisors and the examiners.

Experience

Experience of examining theses is not a criterion for the nomination and appointment of a doctoral examiner. It is presumed that the examiners being professors would have experience of both supervising theses and examining them.

It is well-known in Indian academia that some examiners are extremely strict and academically demanding and would not hesitate to recommend revision of the thesis and even reject it, if they found it to be totally unsatisfactory. There are other examiners who are notoriously slack, who having consented to examine the thesis, do not turn in their report on it unless reminded several times. By experience and word-of-mouth, every supervisor should know which examiners to avoid for empanelment. Conversely, there are extremely sympathetic examiners, who would hesitate to recommend a thesis for revision, let alone reject it, howsoever bad it may be. Evidently, such examiners are in great demand.

Independence of the department or institution

In India, there is no institutionalised mechanism for banning examiners from reciprocal arrangements. In most state universities, supervisors routinely examine each other's candidates on a *quid pro quo* basis; this partly explains the poor quality of their doctoral theses.

Responsibility for nominating and approving examiners

Once the candidate has completed the pre-submission requirements, the supervisor submits a panel of up to ten examiners to the head of the department. This panel is vetted by the committees overseeing doctoral research before it is sent to the vice-chancellor, who in consultation with the dean of the school selects the required number of external examiners, and the supervisor (if he or she is an examiner) for examining the thesis. In some central universities, the examiners are selected from the panel by the academic council or executive council; in institutes of national importance, this is done by the dean of academic affairs. Very rarely do these committees scrutinise the panel that has been forwarded to them or match it with the abstract of the thesis to be examined. It is at the level of vetting the panel that there is scope for game-playing.

The list of examiners selected from the panel in the order of preference is forwarded to the officer entrusted with the conduct of the examination. This is done to facilitate the appointment of alternative examiners in case someone expresses unwillingness to examine or does not respond to the request for examining the thesis.

The examination

Conventionally, after receiving the consent of the examiners, the hard copy of the thesis is sent to them, along with the guidelines for examination and the proforma for writing the report. To expedite the process, with the introduction

of information technology, universities began sending the thesis and the related documents by e-mail; the hard copy of the thesis was sent only if the examiner desired the same. However, with the onset of the COVID-19 pandemic, almost all universities have switched over to e-mail channel for sending the thesis; very few universities follow it up with a hard copy now.

The UGC regulations require that all aspects of the examination to be completed within a period of six months from the date of thesis submission. Towards this end, universities give the examiners one to three months for sending their reports on the thesis. Following this, they are reminded, nowadays through automated communication system, and sometimes, by telephone, too. In spite of repeated reminders, if the examiner fails to send the report, a new examiner is appointed from the list.

To ensure that the report is unambiguous, the examiners are asked to categorically recommend one of the following in a proforma:

- a. the thesis be accepted for the award of the doctoral degree, without any changes;
- b. the thesis be revised (minor or major revisions as suggested) and resubmitted;
- c. the thesis be not accepted for the award of the doctoral degree.

The detailed report accompanying the proforma must provide the justification for the recommendation made. As a supplement to the first recommendation, some universities expect the examiners to indicate whether the thesis can be published or not.

In the case of the second recommendation, the candidate is provided a copy of the examiner's report and asked to revise and resubmit it not earlier than six months. The revised thesis is sent to the same examiner who had suggested revision and resubmission. The examiner, this time, has to categorically recommend the acceptance or rejection of the thesis.

In cases where the thesis is rejected by one of the two examiners, either in the first instance or after revision and resubmission, the thesis is sent to a third examiner, whose recommendation will be treated as final. That is, at least two of the three examiners must categorically recommend the thesis for the award of the degree, or else the candidate will be declared ineligible for the award of the degree; the candidate is allowed to resubmit the thesis only once.

As per the UGC regulations, the viva of a candidate must be held only after receiving positive reports on the thesis from the external examiners. Almost all universities follow this norm. Therefore, the viva, howsoever rigorously it is conducted, is generally a formality; it is extremely rare that a candidate's thesis is recommended for the award of the degree by external examiners and he/she is failed at the viva. But to address this theoretical possibility, some universities make a provision for holding a supplementary viva after a stipulated period.

The viva is conducted by a duly constituted board of examiners which, besides the external examiners, may consist of one or more members nominated by the university, with one of them as the chairperson. It is mandatory that at least one

external examiner is present at the viva. In case the external examiners or the supervisor is not available or unlikely to be available in the next two or three months, the university may nominate substitute examiners on the board.

Among other things, the viva is expected to focus on the points raised by the examiners in their reports. The members of the board ask questions, seek clarifications, and offer suggestions for revision of the thesis for publication. An important task of the board, as mentioned in the regulations of one university, is to ensure that the thesis for which the candidate is being examined is her/his own and that the candidate has a good grasp of the thesis subject.

Most universities do not share the reports of the examiners with the candidate, putting him/her at a disadvantage. Some universities share these reports (sans the examiner's identity) only if the candidate successfully defends the thesis, presumably for the candidate's use in revising the thesis for publication.

The viva, which once was held in camera, is now an open event. Besides the board of examiners, it is now mandated to be open to all faculty members, research scholars, students, etc., who may be interested to attend. Some universities throw it open to the general public, too. While the members of the audience can ask questions and seek clarifications, their opinions do not have a bearing on the outcome of the viva.

On successful clearance of the viva, within a specified period, the candidate is required to make available a specified number of hard-bound copies of the thesis to be stacked in the university library. A soft copy of the thesis is also required to be submitted to the university to be forwarded to the UGC to be hosted on INFLIBNET.⁷

On completion of the post-viva formalities, the candidate will be issued a provisional certificate by the university stating that he/she has been awarded the doctoral degree for the thesis (with its title) in a specified subject or area of study. The degree proper will be awarded at the next convocation of the university.

Summary

The salient features of the Indian doctoral system are as follows:

- since 2016, there has been a national framework for the doctorate programme as defined by UGC regulations, and this framework has been adopted by most universities and university-level institutions;
- where the UGC regulations are silent or permissive of interpretation, universities have made their own regulations and this has resulted in some notable variations in the process of doctoral examination;
- the UGC regulations do not define a doctorate, but some universities have done so by explicitly stating what is expected of a doctoral thesis;
- the thesis is examined by examiners external to the university; the supervisor is not necessarily an examiner in all universities, but is a member of the board of examiners that conducts the viva;

- the university decides the minimum and maximum time for submitting the thesis; the maximum period is relaxed for women candidates and those with disabilities;
- the candidate may be asked to revise and resubmit the thesis if one or all the examiners recommend it, and only after the examiners send positive reports can viva be held;
- the candidate is not generally permitted to see the examiners' reports before the viva which puts them at a disadvantage in preparing for the defence of the thesis;
- the viva conducted by a designated board of examiners is an open/public event;
- the result (invariably positive) is informally announced immediately after the viva, but the official announcement in the form of provisional certificate follows and is confirmed by the award of the degree at the next convocation;
- the soft copy of the thesis is required to be deposited in an open access platform sponsored by the UGC making it available for scrutiny.

Conclusion

In India, the unregulated expansion of the doctoral programme, mostly in state universities, resulted in the rapid decline in the quality of doctoral theses. To arrest this trend, in 2016, the UGC formulated a national framework for the doctorate. With most universities and university-level institutions adopting this framework, there is some uniformity in the doctoral programmes across the country.

However, the fact that the national framework is silent or vague on some aspects, including thesis examination, has necessitated universities formulating their own supplementary regulations. In doing so, the institutes of national importance and the central universities have been successful in injecting rigour into the process of thesis examination. The doctorates awarded by these institutes are almost on par with the doctorates awarded by many world class universities.

However, the state universities and some deemed-to-be universities have not succeeded in this. They go more by the letter of the regulations than their spirit. They appear to be unwilling to introduce such rigour and improve the quality of their doctorates. As a consequence, the quality of doctorates awarded by many state universities is suspect and employers are wary of taking them at their face value.

To be sure, the viva, the concluding step in the award of a doctorate, is now open and more transparent now than it has ever been. The fact that successful theses of many, if not all, universities are accessible on the INFLIBNET's website leaves them open to scrutiny and any foul play relating to doctoral thesis is more likely to invite the attention of the media.

All this has not, however, prevented some candidates and supervisors from indulging in practices detrimental to the honour that the doctorate is endowed with. In particular many state universities in India still have a long way to go before their thesis examination process is brought into line with the best practices internationally.

Notes

- 1 There are differences in the terminology used in various documents relating to the doctorate. For consistency, I have used the terms doctorate (PhD), thesis (dissertation), candidate (student, scholar), and examiner (adjudicator, evaluator, and referee) as synonymous with the terms mentioned in parentheses.
- 2 Irrespective of where a candidate carries out the doctoral work – departments of study in a university, or institutes, centres, or colleges recognised by a university – only universities and university-level institutions established under an Act of Parliament or a State Legislature are empowered to award degrees.
- 3 These include Central University, 46; Central Open University, 1; Institute of National Importance, 133; State Public University, 379; Institutions under State Legislature Act, 5; State Open University, 14; State Private University, 315; State Private Open University, 1; Government Institutions Deemed to be University, 36; Government-aided Institutions Deemed to be University, 9; Private Institutions Deemed to be University, 80.
- 4 These include ten state universities, three central universities, three institutions deemed to be university, and four institutes of national importance.
- 5 A statutory organisation, established by an Act of Parliament in 1956, is responsible for the coordination, determination, and maintenance of standards of teaching, examination, and research in university education.
- 6 The responsibility for preparing and periodically updating this list is entrusted to the Consortium for Academic and Research Ethics (CARE); the list derives its name from the acronym for this Consortium. See https://www.ugc.ac.in/pdfnews/8378640_Public-Notice-CARE-14-01-2019.pdf (accessed on 28 August 2021).
- 7 INFLIBNET (Information and Library Network) is an autonomous Inter-University Centre of the UGC. Its website, <https://shodhganga.inflibnet.ac.in/>, is an open-access platform under Creative Commons for doctoral degree holders to deposit an electronic copy of their thesis.

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8

ITALY

Alex Standen

Introduction

While there have been ‘doctoral’ degrees in Italy since the 12th century, these were in fact undergraduate degrees and it was only in 1980 that the research doctorate was first introduced (Standen, 2021). Since then, the research doctorate has undergone profound changes as successive governments have instituted national reforms, reflecting both contemporaneous changes in the European context and Italy’s long tradition of higher education (Cappa, 2012).

In 2001, the Ministry of Education, Universities and Research (MIUR) was formed, and, in 2013, it introduced rigorous requirements for accrediting and governing doctoral degrees (Ministero dell’Istruzione, dell’Università e della Ricerca, 2013); this remains the national framework for doctoral programmes, directly informing institutional regulations. As this chapter was being written, Italian universities were awaiting the publication of a revised ministerial decree, for implementation in autumn 2022.

Italian universities traditionally offer degrees in all disciplines, including doctoral degrees. Most universities are public and state-run; in addition, there are a small number of private universities accredited to offer doctoral degrees and three Superior Graduate Schools, providing training and research at doctoral or post-doctoral level. Currently, 85 institutions award doctoral degrees (European Commission, 2018) and around 10,000 students graduate with a doctorate annually (Eurostat, 2018).

Doctoral degrees are organised into programmes, of a minimum of three years in duration. The MUIR accredits universities to offer programmes in areas in which they have original and ongoing research and teaching activities, which can support multiple candidates and which are organised around wide yet clearly defined academic themes (for example, Clinical Research, Earth Sciences,

Historical Studies, etc.). A cohort-based model of doctoral education is thus the norm in Italy.

Programmes are grouped under wider Doctoral Schools for quality assurance purposes. The academic and organisational governance of programmes are the responsibility of a Doctoral Programme Committee (DPC), each led by a Doctoral Coordinator. DPCs are composed of at least 16 members of academic staff from relevant disciplines (although they can also include non-university experts who are highly qualified with proven expertise). Generally, candidates' supervisors are selected from within the DPC, but their role is less clearly defined and more variable. There is a comparatively high level of coordination and regulation of doctoral degrees, with DPCs taking on key responsibilities for quality assurance and the progress of doctoral candidates; by contrast to many other national contexts, the role of the supervisor is relatively limited (see Standen, 2021).

Theses can be written in Italian or English (or in another language if authorised), accompanied by a summary. A report of activities undertaken during the programme and a list of any publications are also included. It is increasingly common for programmes to be conducted in English and for the final thesis to be written in English, whether undertaken by home or international students.

Approach to the chapter

In understanding this chapter, it is important to note that the author is researching from outside of Italy. Furthermore, there is a paucity of literature on the examination of the Italian doctorate. In order to gather data, the author contacted the graduate offices of twenty Italian universities offering doctoral degrees and asked them to provide information about their procedures and regulations for final examination. Most responses directed to institutional policy documents, one (the University of Padua) offered more detailed responses. The majority of information provided in this chapter draws upon the regulations reviewed, which were read in conjunction with the 2013 MIUR decree. Where an individual set of university regulations offered further information or a specific example these are cited directly.

As a second stage in the research, the author conducted an informal interview with Professor Paolo Biscari, Dean of the Doctoral School at the University of Milan Politecnico and a member of the Steering Committee of the Council for Doctoral Education of the European University Association. This interview provided a number of clarifications and specific examples from his university context, which are again cited directly.

While there is significant uniformity in institutional documentation and in the responses received from universities, which might suggest an organised and coherent picture of doctoral education, there is in Italy, as Dobbins and Knill (2014, p. 81) have put it, 'frequently [...] a large 'schism' between official government policy on paper and policy in practice at the university level'. This chapter

can only aim, therefore, to offer some initial reflections on the current picture of doctoral examination in Italy and suggest some potential areas for further research on its lived reality.

Doctoral degree standards

The Italian Qualifications Framework defines the standards of degrees, in terms of expected competencies and learning outcomes. It is modelled on the Qualifications Framework for the European Higher Education Area and is aimed at making the Italian higher education system clearer and more transparent, and at enhancing international mobility and comparison (Quadro dei Titoli Italiani, n.d.).

To be awarded a doctoral degree, candidates must demonstrate a number of competencies, which are in line with those outlined by the Bologna Working Group (2005). These competencies include demonstrating knowledge and mastery in the field of study and its associated methodologies, designing and implementing a substantial research project, contributing to original research (with some work meriting refereed publication), critical analysis and evaluation, and academic communication skills (Quadro dei Titoli Italiani, n.d.).

It is generally acknowledged that the question of how doctorates are examined and what examiners are looking for is a complex one – ‘elusive’, ‘a source of mystique’, and with disciplinary differences (Clarke & Lunt, 2014, pp. 803–804). The concept of originality remains key, but it has been problematised and is recommended as being distinct from ‘a contribution to knowledge’ (*ibid*, p. 818). Likewise, in the Italian and European frameworks, originality is one amongst many other criteria, which together offer a fuller picture of the competencies and outcomes expected of candidates. P. Biscari (personal communication, 3 August 2021) noted that in Italy, candidates are expected to develop research and transferable skills through the programme, but these are not specifically assessed; the final assessment is entirely of the thesis. However, as explored further below, how these criteria are specifically interpreted and applied to a candidate’s thesis is not solely the job of the examiners, but that of a three-stage process of different individuals and groups.

Admission to and progression through doctoral education

The 2013 MUIR decree requires that robust procedures are in place to assess candidates’ initial suitability for doctoral study and subsequent progress through their programme, with responsibility for both residing with DPCs. As well as being a vital element in quality assurance, these are important stepping stones towards final examination – both for the candidate in terms of their preparation, and for their DPC to monitor their progress.

Open calls for applications to programmes are published annually and are via a competitive process. Applicants to some programmes may complete entrance

assessments (written or oral), whereas other programmes may require a CV plus interview. Admission processes are agreed upon by the DPC as appropriate to their discipline or field of study, and a smaller Evaluation Committee is formed from the DPC to evaluate applications. The purpose of the admission process is to assess applicants' prior experience and aptitude for research and to ensure a fair comparison of candidates. A ranking list is published, and candidates are admitted to the programme in the order of ranking until all the available places are filled. P. Biscari (personal communication, 3 August 2021) clarified that 75% of candidates per programme should be on funded places (be it by the government, university, or individual supervisor/research group); however, in STEM subjects this is often closer to 90% of students.

At the end of each year, the progress of all candidates on a programme is evaluated by their DPC, upon whose approval they may progress either to the following year of the programme or to the final examination stage as appropriate (typically after three years but this can be longer). This evaluation process might involve a report from the candidate's supervisor, a report from the candidate, a review of courses undertaken or of marks from formal assessments; this would be for individual DPCs to define as appropriate to the discipline and stage of study.

In the case of unsatisfactory annual progress, a DPC may decide to temporarily or permanently exclude a candidate from the programme: in one example from the University of Trento (2016), the regulations state that if a candidate achieves insufficient results in the assessments during the year, or if a negative opinion is expressed by the DPC regarding their admission to the successive year of study, the DPC will 'verify the achievement of the results required for the current year as well as the assiduousness and commitment demonstrated by the student in the research work' (Università di Trento, 2016: article 27.4).

What is evident is that regular milestones and ongoing evaluation are built into the Italian system, and the role played by the DPC within this infrastructure is significant. McAlpine (2013) has argued for supervision to be a 'collective and institutional responsibility' (rather than private and typically one-to-one or two-to-one relationship), which is based upon 'curricular, structured pedagogies' (p. 265). In line with this, the Italian doctoral process appears to be a collective endeavour (at the DPC level, although perhaps to a lesser extent at the institutional level); it is robust, well-regulated and clearly structured. Is this approach ultimately to candidates' benefit? One might argue that it is, given that they may only progress when ready, and that potential issues with the thesis or research may be identified early. However, for other candidates any early difficulties or simply the need to take longer to develop academically, personally, or professionally for doctoral research might find the ongoing evaluation a barrier to accessing doctoral study. An investigation into how this structured and regulated approach is experienced by candidates and the impact it has upon their success might represent an avenue for future research into the Italian doctorate.

Concluding the doctorate

In line with the carefully monitored process of admission and progression, students are well supported and thoroughly evaluated during the final stages too, with thesis submission and final examination consisting of three stages.

Typically, programmes last either three or four years, at the end of which the DPC makes a decision about whether the candidate may progress to the final stage and submit their thesis. The thesis is submitted first to the DPC itself, this being stage one in the assessment process. This internal evaluation leads to a judgement about whether it meets the standards and criteria required by the programme. These criteria can differ from programme to programme: for example, in some disciplinary contexts the DPC might expect a candidate to have published, others may accept a thesis by publication, while there may, by contrast, be disciplines and DPCs which do not expect any publications. As P. Biscari (personal communication, 3 August 2021) noted, it is at this stage that any major issues or serious concerns are discussed and addressed. The process is designed to support students by not allowing them to progress to final examination if they are not considered ready (*ibid*).

In stage two, upon a positive recommendation by the DPC, the thesis is sent to two external academics for evaluation. These external referees are nominated by the DPC and must be unrelated to the thesis and candidate, and must have no conflicts of interest with the DPC. They may be full, associate, retired or Emeritus scholars, fixed-term or permanent researchers, or indeed research managers or people in similar highly qualified roles, who might not have academic roles but will be judged by the DPC to have the necessary experience and expertise to carry out the role of external referee. They may belong to foreign universities, as long as this university does not have an affiliation with that of the candidate.

The role of the referees is to provide a written review of the thesis (some institutions specify a timeframe for this, for example, the University of Verona gives 60 days [Università di Verona, 2021: article 17.4]) and to recommend either that the doctoral candidate be admitted to the thesis defence or that the final examination be postponed for up to six months for significant additions or corrections to be made. In the case of a difference of opinion between referees, the final decision rests with the DPC. In instances where the final examination is postponed, the DPC indicates how the thesis should be improved, based on the suggestions put forward by the referees. Even in cases where the final examination is postponed, at the end of the specified period, the thesis is submitted for defence in *all* circumstances, accompanied by a new evaluation written by the same referees.

P. Biscari (personal communication, 3 August 2021) explained that these external referees may be seen to represent the views of the wider disciplinary community, beyond the candidate's programme. He emphasised that their role is only to provide a written report, and not to enter into academic debate with the candidate who has submitted the thesis. Interestingly, he explained, a candidate

may in fact choose not to act on the referees' recommendations and decide to proceed to the final examination without making the suggested changes. While it would be rare for a candidate to proceed in this way, this clarification does demonstrate that this second stage in the process is one of *recommendation* rather than one which determines the outcome of the assessment process.

This is a significant stage in the process of doctoral examination, which allows the candidate and their DPC to gain external judgement on the quality of the work and to receive feedback on it. A piece of research by Kumar and Stracke (2018) explores the extent to which the role of the doctoral examiner is a 'teaching' role, in that they are not only there to provide a summative assessment, but also to give feedback that helps the candidate to close the gap between current and expected performance (known as 'assessment for learning'). They argue that doctoral candidates are still learners whose work will benefit from developmental feedback, making the endeavour a 'process of co-production of knowledge' between candidate and examiner (2018, p. 225). They call for an improvement in academic practices, which take into account this 'teacherly' role to enhance learning (*ibid*, p. 225). The second stage in the Italian doctorate is unidirectional, rather than an example of co-production or debate, but the provision of formative feedback by independent referees could be seen as a positive illustration of 'assessing (the thesis) for learning'. A further study of the Italian doctoral examination process might explore their role in more detail to consider how the feedback they offer is expressed and acted upon by candidates.

Final examination

In the third and final stage of doctoral examination, candidates defend their thesis before an Examination Board. These examinations take place in public and typically consist of a presentation followed by questions from the examiners, lasting around 60–90 minutes (P. Biscari, personal communication, 3 August 2021).

One or more Examination Boards are appointed by University Rectors for each doctoral programme, upon advice from the DPC. These Boards are usually composed of three members, up to a maximum of five. The membership is typically academics and researchers from the same academic discipline as the programme, at least two of whom must belong to external universities. There should be no conflicts of interest with the candidate, and so Examination Boards do not include members of the DPC, supervisors, or external referees. Boards are chaired by their longest-serving member.

Some institutions provide further detail on the composition of Examination Boards. For example, that they may include one or two experts from Italian or foreign public or private research bodies (Università di Trento, 2016: article 32.3), or, in the case of programmes made up of more than one discipline, can be expanded so as to include at least one researcher who is expert in each disciplinary area covered (Alma Mater Studiorum–Università di Bologna, 2017: article 23.1).

Boards are given deadlines to work towards, for example, within 12 months of the official end of the programme (for example, the University of Trento, 2016)

or 90 days (for example, the Università Cattolica del Sacro Cuore, 2017 and the University of Messina, 2014). Indeed, the University of Turin specifies that if the 90-day deadline has passed, the Board lapses and the Rector appoints a new one, excluding the initial members (Università di Torino, 2020: article 32.3). At some institutions thesis discussions take place at a specific time in the year: for example, at the University of Verona (2021) discussions normally take place in April and May of the year following the end of the programme. In general, the date of the final examination can only be changed in exceptional circumstances.

Exams must be held in the presence of the full Board, but if any members are abroad they may be able to join via videoconferencing. A response from the University of Padua noted that all oral examinations had moved online during the COVID-19 pandemic (administrator, personal communication, 31 March 2021) – and one would assume this to be the case elsewhere. There was no indication in the response as to whether a more general shift to online examinations after the pandemic was under discussion, but P. Biscari (personal communication, 3 August 2021) noted that as of May 2021 at his university some examinations had begun to take place in person again and that this was the preferred option.

What role does this final, public exam play in the overall process of doctoral assessment?

As has been seen, in order to reach this final stage, the thesis has already progressed through two stages of evaluation and it might therefore be assumed that the final examination is entirely ceremonial. However, institutional regulations clearly state that at the end of the public defence, the Board will approve or reject the thesis and that the title of doctorate will only be awarded upon the Board's positive evaluation of a thesis that contributes to the advancement of knowledge or methodologies in the chosen field of investigation. In other words, following Bogle (2015), the possibility of failure does exist. Moreover, failure at this final examination stage is definitive: if the thesis is rejected, the candidate is excluded: to cite one indicative institutional regulation, 'the final doctoral exam can be taken only once' (Sapienza Università di Roma, 2019: article 16.9). Other universities clarify the importance of this final stage in other ways: at the University of Trento, the Board's written assessment is 'an integral part of the final examination minutes' (Università di Trento, 2016: article 33.4).

In terms of how the regulations translate to practice, P. Biscari (personal communication, 3 August 2021) confirmed that the Examination Board is responsible for the final judgement, but that in reality the rate of failure is very low. As such, we might place Italy within Kumar et al.'s second, hybrid, category of doctoral examination, in which candidates must defend their thesis in the presence of an examination committee, which includes a chair, examiners, and supervisors; Kumar et al. (2020, pp. 1–2) position this viva 'as a rite of passage'. Where Italy does not conform is that supervisors do not form part of the Examination Board and an independent chair is not required.

Examination Boards do have a third awarding option: in the case of outstanding findings or results of particular importance, they may award the degree '*cum laude*', meaning 'with honours'. P. Biscari (personal communication, 3 August 2021)

explained that different DPCs are able to develop their own criteria for the awarding of honours, which may include recognition of a candidate's publications, periods of study abroad, grades received in credit-bearing courses, or English language skills. Typically, around 10% of candidates graduate with this recognition (P. Biscari, personal communication, 3 August 2021). Finally, at one university surveyed, there was an outcome other than approved, rejected, or with honours: at the University of Messina the Examination Board, 'attributes an overall opinion on the thesis and on the student's path, choosing from [...]: "sufficient", "good", and "excellent". The [Board] has the right to award honours in the presence of results of particular scientific importance' (Università degli Studi di Messina, 2014: article 23.2).

Summary

The key features of the Italian doctoral examination process are that:

- regular milestones and evaluation of candidates are built into the doctoral process from initial recruitment and throughout the degree programme;
- candidates undergo a three-stage process of assessment, from their DPC, two external referees, and an Examination Board;
- the DPC defines the expected standards and makes an initial judgement on the candidate's readiness to progress;
- two external referees provide a report on the thesis and recommend whether the candidate can be admitted to the final defence;
- the final examination is a public defence of the thesis, which plays both an evaluative and ceremonial role;
- supervisors, members of the DPC, and external referees do not form part of the Examination Board;
- the outcomes of the final examination are either pass or fail, but the highest performing candidates may be awarded their doctorate with honours.

Conclusions and future research

The public facing materials which informed much of the content of this chapter tell one side of the story. Indeed, Dobbins and Knill (2014) go as far as to suggest that Italian higher education is a 'goldmine for researchers working from the perspective of political science and public administration' (2014, p. 80): for some observers, it represents 'centralization *par excellence*', while for others, institutions are 'bastions of academic "clans", which have taken on their own inner lives and escaped state control and steering' (*ibid*, p. 79). As indicated throughout this chapter there are a number of areas of the Italian doctoral examination process which warrant further investigation, and which might provide fertile terrain from which to unpack some of the more opaque features of the Italian higher education environment.

What is evident is the significance throughout the doctoral process of the DPC: from first admission to final examination, this Committee assumes many of the responsibilities that might elsewhere fall to supervisors and even, arguably, to examiners. What impact does this closely regulated environment have on candidates, academically, professionally, and indeed psychologically? Are there ever discrepancies between the judgement of DPCs, external referees and Examination Boards and, if so, who ultimately defines what the standards of a thesis are and whether a candidate succeeds? A piece of research that sought to interrogate some of these questions might consider statistical data on passes, failures and withdrawals, or interview candidates, examiners, and DPC members about their experiences of doctoral examination in Italy, its purpose, function, and substance.

Interestingly, P. Biscari (personal communication, 3 August 2021) suggested that one of the main additions expected to be included in the new national regulatory framework for doctoral degrees will focus on the role of the supervisor, bringing the quality assurance of this role in line with that of the rest of the doctorate. Observers of the Italian doctorate might be interested to see how this might affect the experience of candidates and the role of the DPC, and – in the context of this chapter – whether it would have any impact on doctoral examination.

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9

JAPAN

Shinichi Yamamoto

Introduction

Doctoral education in Japan began in 1886 with the establishment of the first modern university, the Imperial University in Tokyo (The Imperial University Order, Article 2). This consisted of five colleges plus a graduate school¹. Research training was modelled on the German system of an apprenticeship for aspiring academics, but in addition, the graduate school could award unearned doctorates to individuals who could demonstrate high academic attainment. In practice, relatively few doctoral degrees were earned and the vast majority awarded were unearned, a situation which remained the same during the expansion of universities during the first four decades of the 20th century (Ushiogi, 1993).

After the end of World War II, the Japanese higher education system was reformed along the lines of that in the United States. At the postgraduate level, a new system of graduate schools (Kenkyuka in Japanese), which consisted of a two-year master's programme and three to five years of a doctoral programme was introduced in universities. These became and remain the primary units for providing postgraduate programmes (Yamamoto, 2020). The main difference from the pre-war system was the expectation that if students received systematic research training at the doctoral course and took a fixed period of time, they would be able to obtain earned doctoral degrees.

In 2020, there were 795 universities (86 national, 94 local public, and 615 private) in Japan, of which 459 (77 national, 66 local public, and 316 private) provided doctoral programmes (Ministry of Education, 2020). In 2017, there were just over 80,000 students enrolled in these programmes, and in that year, there were just over 15,000 doctoral graduates (World Bank, 2019).

This chapter looks at (1) the national framework for doctoral education, (2) assessment in the course of doctoral studies, and (3) the process of final examination.

The national framework for doctoral education

Unlike the United States or many European countries, in Japan the government plays a decisive role in the governance and management of the higher education system, including that of doctoral education. Universities must gain approval by the Minister of Education when they establish graduate schools (Article 4 of SEL²). For this, they must submit detailed planning documents to the Ministry including the name of the graduate school, the type of degree, the names of the professors in charge, the list of their research achievements, facilities, etc., and undergo a review by the Council for University Establishment within the Ministry of Education. In addition, after initial establishment, they must be evaluated and certified by one of the accreditation agencies every seven years. In 2021, there were five accreditation agencies for universities each with policies for accreditation including the evaluation of doctoral programmes.

For doctoral education, the key regulations are the ‘Graduate School Establishment Standards (GSES)’³ that stipulate requirements for doctoral programmes in graduate schools and the ‘Degree Regulations (DR)’⁴ that stipulate requirements for the doctoral degree itself. Both are provisions set by the Minister of Education within the range of SEL.

According to Article 4 of the GSES, the purpose of a doctoral course at a graduate school is to develop the advanced abilities necessary to be independent researchers and to undertake highly specialised work in their field and make an original contribution to knowledge. This does not distinguish between academic and professional doctorates, both of which are labelled as ‘Hakushi’(doctor) in Japanese. However, there is a general recognition that doctoral degrees in medicine and engineering are professionally oriented, whereas doctoral degrees in the fields of the arts, humanities, and the social and natural sciences are academic-centred. This chapter focuses on the latter.⁵

Article 4 of the DR provides for two routes to a doctoral degree. One is to enrol and complete a doctoral programme in a graduate school; the other is not to engage in the programme but to present a dissertation for examination by the graduate school which then has to confirm that the candidate has academic ability equal to or higher than those who have followed the programme route. In the vast majority of cases, however, doctoral students enrol in doctoral programmes and undertake a supervised research project.

Article 17 of the GSES specifies the requirements for a doctoral programme. These are (1) to be enrolled for five years or more in a graduate school (including two years to complete a master’s degree/qualifying examination and three for the doctoral programme); (2) the acquisition of 30 credits or more; (3) undertaking a research project under guidance; and (4) writing a doctoral dissertation and passing the final examination.

With regard to the first requirement, most graduate schools’ entry to the doctoral programme is conditional upon the completion of a master’s degree, including the completion of a master’s thesis. A few graduate schools have instead

adopted the US model of a qualifying examination, but this is very much the exception rather than the rule. A problem of the 30 credits' acquisition is that it does not support students to acquire a wide range of knowledge and skill but is only a narrow range of subjects directly relating to their master's theses and planned future doctoral dissertations.

Regarding the third requirement, the mode of research varies greatly depending on the specialised field. Just like in the United States, research in science tends to be more laboratory-intensive, where a graduate student may work alongside or be closely supervised by a faculty advisor, while in humanities and social sciences, research is library-intensive, and a graduate student is more likely to work independently (Gumpert, 1993). The latter mode tends to take longer time for students to complete their research.

Submission for examination

Within the regulations of GSES⁶ and DR Graduate schools have their own systems and policies regarding the submission of doctoral dissertations. They established several stages through which students must pass. Generally speaking, these are (1) seeking permission to start writing a dissertation, (2) intermediate examinations run by the graduate school, and (3) final submission approved by the chief supervisor with the consent of other supervisors.

The first stage is when doctoral students clarify the theme of a dissertation with gathering documents, materials, and data necessary for writing the dissertation. The chief supervisors must be consulted regarding these matters and then, after approving the plan for the dissertation, they start supervising the students regularly at least once a month or so in humanities and social science fields. If the students' major is science or engineering, the contact with supervisors is more frequent because the students work with their supervisors in the laboratories.

The second stage is intermediate examinations. Graduate schools have a system of intermediate examinations, which are called midterm tests or preliminary examinations, to monitor the progress of writing the dissertation. If the progress is not enough, the student cannot move on to the next step. The student must rewrite his/her draft again and again, thinking more deeply and/or collecting more evidence by reading materials and/or interviewing more persons, if its theme is in humanities or social sciences, until the supervisors, especially the chief supervisor, agree that it is complete.

The final submission is at the completion of the doctoral dissertation. Who decides that the dissertation has completed? In most cases, it is the chief supervisor with the consent of other supervisors on the team. Some students may submit their theses without consent of their supervisors, but they will risk not passing the final examination. In addition to the main body of the thesis, it is often required to submit publications. In the humanities and social sciences, many graduate schools require that in addition to the main body of papers, candidates must

submit two or more papers published in academic journals with peer review, which creates additional work for them.

In Japan as elsewhere, there were variations in the length of submissions by disciplines. The longest dissertations are in the humanities (320,000 characters in the average or 267 pages if one page contains 1,200 characters) and the shortest in medicine (below 40,000 or 33 pages), with science and engineering located in between (Tonglin, 2007, p. 59).

Nomination and approval of examination committee

In Japan, as in the United States, the examination committee normally comprises the supervisory team, and is chaired by the chief supervisor. This, of course, can create a potential for a conflict of interest, and for this reason it is conventional to nominate an examiner from another department of the university and/or an examiner from another institution.⁷ These are nominated by the chairman, with the criteria that, for examiners internal to the institution, they should be teaching and supervising research at the graduate school, and for internal or external examiners that they are usually professors with PhDs and that they have the specialist knowledge necessary for the thesis examination.

Once nominated, the membership of examination committee is subject to approval by the faculty meeting of the graduate school and, once approved, is then appointed by the dean of the graduate school or the president of the university. However, approval by the faculty meeting of the graduate school tends to be routine because faculty understand the reasons for including the existing supervising team as examiners and adding another internal or external member.

Examination of the thesis

Once the dissertation is submitted, the form and necessary documents have been checked by the administrative staff, the process of examination begins. First, each member of the committee must read the dissertation carefully and evaluate it. Common criteria, in addition to the formal requirements such as length (around 120,000 characters in Japanese or 35,000 words in English in humanities and social sciences but much less in science and engineering) and style of references, are that the dissertation should have clear aims and objectives, be academically significant, be original, analyse problems using appropriate academic methods and methodologies, and that the conclusion should be supported by the evidence. Second, each member of the committee writes an independent report, which is sent to the chairperson.

Then the chairperson of the committee convenes a meeting of all the examiners, to discuss the results of the reviews by the committee members. If the dissertation is judged as defensible, it proceeds to the final examination, but if it is judged as inadequate, it will be rejected and the candidate required to rewrite it.

Final examination

The final examination of doctoral dissertations at graduate schools is conducted orally by the same set of examiners and, in many cases, is open to the public. The committee chairman will announce the place, date, and time of the final examination in advance so that people who are interested in participating have time to be ready. It is common that all the members of the committee, including external ones, are asked to attend.

The oral examination commences by the candidate explaining the intentions and contents of his/her dissertation within the time limit specified by the committee, usually one hour or so. Candidates vary in their approaches to the presentation, with some explaining their thesis spontaneously in their own words, whereas others read from prepared texts. The latter may be clearer, but it is boring for the participants! However, as far as the author knows, the approach adopted does not affect the results of the examination.

The next stage will be questions by examiners, which will also last one hour or so. Here, the chair's role is not normally to ask tough questions – otherwise, there could be a conflict of interest with their previous role as chief supervisor – but to facilitate the exam, encourage candidates to answer as necessary, and organise issues.

After the examiners have completed their questions, the committee will meet in private and discuss whether the dissertation should pass or fail. Once all the members agree, the committee will make a joint recommendation. This takes the form of a document signed by all the members of the committee which states the outcome – pass or fail and the reasons for the judgement. This report is then sent to the dean of the graduate school.

Upon receiving the report, the dean consults with a faculty meeting of the school about whether the results should be accepted or not. Prior to the meeting, faculty members can ask the graduate school office for a copy of the dissertation so that they can judge whether or not it meets the standard. At the meeting, faculty vote on whether or not to accept the examination committee's recommendations – it is extremely rare for the voting to overturn it. The outcome is then reported to the president of the university, who makes the ultimate decision to award a doctoral degree in accordance with the provisions of laws and regulations.

Debates on doctoral examination

Over the past two decades or so, the Japanese government⁷ has adopted a global strategy of making doctoral degrees acceptable internationally. With regard to examination, in 2005 the Central Council for Education required that institutions use plagiarism search software to detect cheating (Central Council for Education, 2005). Additionally, it recommended that institutions should (1) publish thesis presentations, (2) publicise the names of the thesis review committee

members, and (3) actively appoint external members to examination committees. In a 2016 survey of institutions, about 90% said they published thesis presentation, 70% said they had published the names of the committee members for the degree examination, but only about 40% had introduced plagiarism detection software.

Summary

- the overall framework for doctoral education is set by the state, but details, including the way of examinations, are left for decision by the graduate schools and supervisors;
- within this framework, nearly all the institutions require that students complete a master's degree before advancing to a doctoral programme;
- at the end of the doctoral programme, it is a chief supervisor, with the consent of other supervisors, who decides whether the doctoral dissertation can be submitted for examination;
- the examination committee is nominated by the chief supervisor and appointed by the dean or the president of the university and consists of former supervisors and one or more newly appointed researchers on/off campus;
- before the final examination, the dissertation is examined by an examination committee and feedback is given to the candidate if the dissertation is insufficient and needs to be rewritten;
- after that, there is a public oral examination which takes the form of final examination;
- then, the examination committee may recommend to the dean whether the candidate passes or not;
- the dean then consults with members of the faculty, who vote on whether or not to approve the recommendation;
- the final decision of degree granting is made by the president.

Conclusions

Reflecting the post-war adoption of much of the US system of graduate education, doctoral examination in Japan is very similar to this model. The chief supervisor plays a key role in the examination process, and the examination committee includes other members of the supervisory team, and this may give rise to concerns about the independence of doctoral examiners. However, there are three safeguards within the system. First, there are usually other examiners from inside and/or outside the university who participate in the examination and in the decisions of the committee. Second, examinations are normally held in public, and the questioning of candidates and their theses are open to wider scrutiny. Finally, the committee can only make recommendations, and there are further stages before a decision can be made final.

Notes

- 1 Five colleges were law, medicine, engineering, literature, and science.
- 2 SEL (School Education Law).
- 3 GSES (Graduate School Establishment Standards) <https://elaws.e-gov.go.jp/document?lawid=349M50000080028>
- 4 DR (Degree Regulations) <https://elaws.e-gov.go.jp/document?lawid=328M50000080009>
- 5 The exception is 'Juris Doctor degree (Homu-hakusi in Japanese)', which is awarded to those who have completed law school. This degree is professional, but it is not a qualification required by a lawyer. In order to qualify, they must pass the bar exam and receive training.
- 6 <https://elaws.e-gov.go.jp/document?lawid=349M50000080028>
- 7 The author has supervised doctoral candidates and been a chairman of the examination committees many times when worked for 3 graduate schools of education. At these graduate schools (National 2 and private 1), examination committee consisted of former supervisors and sub-supervisors plus other examiners to the committee.

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10

KENYA AND UGANDA

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Introduction

Unlike many other countries in this book, Kenya and Uganda do not have long traditions of providing doctoral education due to their colonial and post-colonial history. Thus, their educational infrastructures and scholarly production at the doctoral level are still evolving. However, along with the global trend, there is now a much stronger focus on doctoral education in the sub-Saharan African region as a whole (Woldegiyorgis, 2020) and recently in both Kenya and Uganda, the number of doctoral graduates has grown rapidly. At the present time, ten higher education (HE) institutions in Kenya¹ awarded 1,187 PhDs between 2011 and 2015 (Barasa & Omulando, 2018). A comparable number of home-grown graduates were produced in Uganda although over a much larger time span: between 1970 and 2020, Ugandan institutions awarded 1,197 PhDs (Etomaru et al., 2021). Of these, nearly 86% had graduated from public universities, most commonly from Makerere University (ibid.). However, along with the global trend, there is now a much stronger focus on doctoral education in the sub-Saharan African region as a whole (Woldegiyorgis, 2020) and recently in both Kenya and Uganda, the number of doctoral graduates has grown rapidly.

Against this background, we initially describe the post-colonial history of Kenya and Uganda in order to contextualise their conditions for organising doctoral education. The national HE frameworks of each country are introduced followed by exploration of how doctoral examination is framed in local policy and practice at two public universities, namely Makerere University in Uganda and the University of Nairobi in Kenya. These specific cases were chosen for scrutiny because they share a similar post-colonial history in many respects and are the major providers of doctoral education in these two countries, while they also differ in their conditions for developing doctoral education. Since 2000,

numerous international donors including the Carnegie Corporation of New York, the German Academic Exchange Service (DAAD), and the Swedish International Development Cooperation Agency (SIDA) have supported Uganda in research capacity building, especially doctoral education (Akuffo et al., 2014; Etomaru et al., 2021). However, there have not been similar large-scaled and focused investments in the University of Nairobi. As we shall see, this difference is reflected in the institutional policies for doctoral education, which are fairly established at Makerere University but still emerging at the University of Nairobi.

The post-colonial context

Before the 1940s, there were few universities in Africa, and predominantly Africans pursued their PhDs at British and American universities (Roberts, 2016). After World War II, the colonial powers did establish universities across Africa by focusing on professional programmes and training (e.g., teachers and lawyers), although capacity building at the doctoral level was not prioritised within the colonial institutions. Hence, Africans still had to attain their PhDs internationally. Coupled with long-lasting political instability and weak national economies, the same circumstance also holds for most of the post-colonial period (Woldegiyorgis, 2020), starting with independence in 1962 in Uganda, followed by Kenya in 1963.

According to Mkandawire's (1995) critical analysis of the African post-colonial development in the twentieth century, the initial (internationally based) strong capacity building of the first generation of African academics declined with the following two generations. In contrast to the first generation, the second generation of African academics generally did not return after their studies abroad. The third generation, for their part, found themselves in a situation where the national rationale for supporting international studies was questioned because of the experienced brain drain from the second generation. At the same time, the educational infrastructure (including library and ICT) was not yet sufficiently developed in the post-colonial African countries to support domestic doctoral education of high quality. Combined with the fact that the first generation of African academics was retiring, the third generation faced many educational challenges not only at the doctoral level but also throughout their entire HE system (*ibid.*). On top of these difficult conditions, doctoral education expanded significantly in Africa in the twenty-first century to meet the political demands for knowledge economy workers to help to develop the continent (Friesenhahn, 2014). However, expansion has been limited because the existing number of academics holding a PhD, and hence with the potential to supervise, has been woefully inadequate in Africa as a whole and in Kenya and Uganda particularly.

Because of both the historical neglect of doctoral education and the shortage of supervisors, there have been a number of quality issues in Kenya and Uganda.

Along with many other countries in sub-Saharan Africa, these are reflected in a general lack of clear institutional guidelines at the doctoral level, poorly prepared students and programmes, insufficient funding and scientific resources, and supervisors with limited research experience and training in supervision (Barasa & Omulando, 2018; Etomaru et al., 2021; Rukundo, 2020; Woldegiyorgis, 2020). Related to these quality issues, there is also a concern for producing research of national relevance.

However, significant educational developmental work has recently been implemented to improve the conditions for African doctoral education in general. Recent initiatives include the establishment of several consortia including: the Consortium for Advanced Research and Training in Africa (CARTA) in 2009; Medical Education Partnership Initiative (MEPI) in 2010–2015; Developing Excellence in Leadership, Training, and Science in Africa (DELTAS Africa) in 2015–2020; and Human Heredity and Health in Africa (H3Africa) in 2011–2021, to mention a few. In particular, CARTA aims to strengthen doctoral training and research capacity building across disciplines, including specific support for women generally and those with children in particular (Balogun et al., 2021), who face more career challenges than their male counterparts (Chacha, 2021). Notwithstanding, focused studies on doctoral examination in Kenya and Uganda are still lacking, so we will now take a first step in this direction.

National frameworks for higher education

In 2014, the *Commission for University Education* (CUE) in Kenya specified the ‘Universities standards and guidelines’ on 170 pages for their entire national HE system. In 2016, the *National Council for Higher Education* (NCHE) in Uganda provided ‘The Uganda Higher Education Qualifications Framework’, comprising 47 pages. In both documents, the call for nationally relevant competence is salient. The Kenyan CUE stipulates that the academic programmes shall be ‘consistent with educational goals and aspirations of Kenyans’ (CUE, 2014, p. 46). This is echoed in the Ugandan framework wherein the NCHE requires curricula to be aligned with Ugandan interests (NCHE, 2016, p. 22).

Kenyan national framework for higher education

According to the Kenyan national framework, universities can establish their own academic admission requirements for their HE programmes, although ‘relevant academic Master’s degree holders’ is nationally stipulated as a minimum qualification for admission at doctoral level (CUE, 2014, p. 58). In the same framework (CUE, 2014, pp. 49–52), it is further stated that doctoral education shall ‘normally extend for at least three academic years’, and that the student shall have at least two academic supervisors with ‘appropriate qualifications in the subject area in focus and its methodology’. Also, programmes can lead to

either a *Doctor of Philosophy degree* or a *Professional doctoral degree*, where the former focuses on ‘producing scientist practitioners who are mainly engaged in generating knowledge through research and teaching’ while the latter focuses on ‘producing practitioner scholars who are engaged mainly in consuming knowledge, practice and active research’. In any programme, the amount of research should ‘not be less than two thirds of the entire programme’, and the thesis should comprise ‘at least 50,000 words’. Moreover, to be awarded a doctoral degree, the student should ‘show proof of acceptance for publication of at least two papers in refereed journals’.

In relation to the overall outcomes, the Kenyan framework (CUE, 2014, p. 49) stipulates that the doctoral degree programmes shall:

- i. enhance knowledge at the most advanced frontier of the discipline or field of study;
- ii. provide the learner with the most advanced and specialised skills and techniques required to:
 - solve critical problems in research and/or innovation;
 - extend and redefine existing knowledge;
- iii. entail demonstration of substantial authority, innovation, autonomy, scholarly and professional integrity, and sustained commitment to the development of new ideas or processes at the forefront of a discipline or field of study.

With respect to assessment of the student’s thesis work, the national regulations require that certain steps should be undertaken. Before the research project starts, the student’s thesis proposal should be examined by the faculty/school forum for initial guidance, while in the end of the educational programme, the thesis should be assessed by internal or external examiners. In order to avoid plagiarism, the framework further stipulates that each university is responsible for employing mechanisms that deter and detect unauthorised copying. According to the framework, doctoral examination must also involve an oral presentation ‘to a panel of examiners determined by the university’ (CUE, 2014, p. 52).

Ugandan national framework for higher education

According to the Ugandan national framework, a minimum of 540 credits is required for a doctorate. This corresponds to three years of full-time studies. In Uganda (NCHE, 2016, p. 13), four types of doctoral degrees can be earned:

- a. doctoral degrees by research only;
- b. doctoral degree by coursework and research;
- c. doctoral degree by publications: ‘Each published paper constitutes a chapter of the thesis’;

- d. integrated MPhil/PhD programme, where the doctorate ‘comprises a taught component leading to the award of an MPhil and a research component leading to the award of a PhD. The students undertake the two components of the programme simultaneously and shall complete both if they are to be awarded the doctorate’.

Each doctoral degree has different admission requirements. Whereas a Master’s degree or its equivalent is required for programmes awarding the first two doctoral degrees above (a or b), a Bachelor’s degree or equivalent competence is enough for admission to Integrated MPhil/PhD programmes (d). The most rigorous admission criteria are for a doctoral degree by publications (c). In that case, the potential doctoral student does not only need to hold a Master’s degree or equivalent qualification, but he/she also needs to ‘be actively involved in research’ and ‘apply for admission with at least four peer-reviewed journal articles, book chapters or ranked peer-reviewed conference papers’. These publications are required to share a common theme, to have been published within a period of five years, and to ‘form a basis for the award of a PhD’ (NCHE, 2016, p. 30). To us, this latter type of doctoral degree sounds like the entire research project should be completed before admission. On the other hand, this option enables experienced and skilled academic staff to quickly earn a doctorate based on their previous research and publications. However, this form of admission is rare in practice.

Irrespective of the type of doctorate, the following criteria apply for awarding a doctoral degree. The student needs to:

- a. show a systematic comprehension, independent and an in-depth understanding of a discipline with a mastery of skills and research processes related to the field of study;
- b. contribute to the original research that broadens the boundary of knowledge through an in-depth thesis/dissertation and defence;
- c. use intellectual independence to think critically, evaluate existing knowledge and ideas, undertake systematic investigations, and reflect on theory and practice to generate original knowledge;
- d. communicate with peers, scholarly communities and society at large concerning the field of expertise;
- e. demonstrate ability to use technologies and make appropriate innovations;

Take leadership in the area of expertise in evaluating and making decisions in situations with limited information while considering social responsibilities and related ethics (NCHE, 2016, pp. 12–13).

Unlike Kenya’s framework, there are no national regulations on supervisors in the Ugandan national framework. Neither are there any national regulations for the doctoral examination process.

Two cases of local policy and practice

Shifting focus from the national level to local policy and practice, we now concentrate on two public universities: Makerere University in Uganda and the University of Nairobi in Kenya. Founded in 1922, Makerere University is one of the oldest universities in Africa, while the University of Nairobi was founded three decades later, in 1952. Both were originally established as external colleges of the University of London, and became a part of the post-colonial University of East Africa in 1963, before they finally became nationally independent universities on 1 July 1970. Currently, Makerere University hosts around 35,000 undergraduate students and 3,000 postgraduate students (including both Master's and doctoral students). In 2020, 62 PhD students earned their doctorates (Makerere University, 2020, p. 100), and in 2021 this number rose to 108 PhD students (Makerere University, 2021, p. 123). At the University of Nairobi, the current student population is about 84,000 students², including 13,000 postgraduate students in 2013³. In 2020, a total of 120 PhD students graduated from the University of Nairobi (2020a, 2020b)⁴.

From this point of departure, our study on doctoral examination is informed by local policies and the voices of 19 academic staff members (11 from Uganda and 8 from Kenya). Most were senior lecturers, and the majority belonged to the natural sciences or social sciences, although we received responses to our questionnaire from all other faculties as well. Thus, even though our samples are small, they reflect various experiences. Hereafter we will refer to Makerere University as the 'Ugandan case' and the University of Nairobi as the 'Kenyan case', respectively.

Overall organisation of doctoral education

In accordance with the national frameworks, our respondents from both universities stated that the expected length of full-time PhD studies should be at least three years – while in reality, the actual completion rate is generally much slower in both Kenya (Matheka et al., 2020) and Uganda (Muriisa, 2015; Wamala & Oonyo, 2012). In both cases, the respondents also held that the most common types of doctoral studies were based on research only, while potential mandatory coursework could range between 2nd and 4th semesters. Furthermore, all respondents unanimously indicated that it is a requirement to publish peer-reviewed article(s) from PhD work before graduation. Typically, the doctoral student should have published two articles, although for a 'Doctoral degree by publications' in the Ugandan case, the institutional handbook suggests that at least five papers should have been published/accepted for publication.

Preparing for the examination

In both national cases, the doctoral students need consent before submitting the thesis for examination. In the Ugandan case, there is a doctoral committee that should be contacted for permission to submit. This committee is constituted at the departmental level and consists of three to five persons, including at least two members from the student's major field of study (one or both could be the student's supervisor) and the Head of Department or Deputy Dean in charge of research (School of Graduate Studies, 2010, p. 45). In the Kenyan case, the procedure for submission was recently settled in July 2021 in the institutional 'Guidelines for examination of theses' where it is stated that:

The student shall give notice of intent to submit the thesis, dissertation or project paper for examination to the Dean; through the Supervisor and Chairperson of the Department where the candidate is registered, three months before the date of submission.

(Guide, 2021, p. 4)

According to the Kenyan university guidelines, the same contacts also apply for the student's submission of the thesis, and the Dean is then responsible for sending the material and assessment guidelines to the examiners.

Constitution of the Examination Board

The constitution of the Examination Board is similar in both universities, including two internal examiners and one external examiner (outside the university) for the thesis examination. The internal examiners usually come from the student's department, and in the Kenyan case one of these is also the thesis supervisor with reference to both our respondents and the national guidelines (Guidelines for Examination of Theses Senate Doc, 2021, p. 5). In the Ugandan case, the supervisors seldom have this double role, although it occasionally occurs according to the respondents in our questionnaire.

Furthermore, the thesis examiners need to hold a PhD themselves, while one Kenyan respondent also stated that the examiners had to be professors/associate professors as well. However, the latter option depends on the availability of staff holding such positions within the student's research area. One should keep in mind that the professors are extremely few at the national level. For instance, in the older established universities in Kenya only about 40% of all academic staff hold a PhD, while the number of associate/full professors amounts to 5–10%. In the younger universities, these percentages are even lower (Barasa & Omulando, 2018).

Coupled with the thesis examination, doctoral students are required to present and defend their thesis work in a public oral examination/viva voce. Doctorates are examined in this way in both cases, and the entire Examination

TABLE 10.1 Doctoral examination boards in the two cases

<i>Committee of examiners</i>	<i>Makerere University (Uganda)</i>	<i>University of Nairobi (Kenya)</i>
Thesis examination	Number of persons	Number of persons
Internal examiners (within university)	2	2
External examiner (outside university)	1	1
Public oral examination/viva voce	Number of persons	Number of persons
Chair of the committee	1	1
Opponent	1 ^a	0
Internal examiners (same as above)	2	2 ^b
Other panel members	2–5 ^c	4 ^c

- a The opponent should come from another university or another unit within the same university.
 b According to the university guidelines in the Kenyan case, one of the internal examiners is also the student's supervisor, while the other is not.
 c In the Ugandan case, these panel members are external to Makerere University and may come from organisations outside academia. In the Kenyan case, the independent panel members consist of academic staff (within/outside unit).

Board consists of a chairman from the student's department, the internal thesis examiners, and additional panel members to oversee the examination. In the Ugandan case, all additional panel members are external, and may come from, e.g., firms and industry, relevant ministry, or be retired academics. There is also an invited opponent discussing the thesis with the student, and written descriptions for how the viva voce should proceed (School of Graduate Studies, 2010, pp. 50–52). In the Kenyan case, the additional panel members include two academic staff, one within the unit and one outside, and there is also one person representing the Senate for postgraduate studies, and one member serving as secretary to the board (Guidelines for Examination of Theses Senate Doc, 2021, p. 5). In contrast to the Ugandan case, there is no opponent involved. For an overview of the examination boards in each country, see [Table 10.1](#).

Assessment process and criteria

In the Ugandan case, there are detailed assessment criteria for examiners to apply to the thesis. These are specified for each section of the thesis (background, problem statement, methods, results, etc.), and the sections are scored on different scales dependent on their overall extent and significance for research. For instance, the thesis 'background' is scored a maximum of 5 points, while 'research methods' can be scored up to 20. Similarly, other more general quality aspects such as originality, and literature citation are scored differently dependent on their overall weighting. The reviewer report needs to end with explicit indications what needs to be corrected, and whether the reviewer thinks that a doctoral degree can be awarded (without or after corrections). The grading system is set out in [Table 10.2](#), where the pass mark is 60%, i.e., grade C. In the case

TABLE 10.2 Doctoral thesis grading at Makerere University, Uganda

<i>Grade</i>	<i>Score (%)</i>
A+	Exceptional (90–100)
A	Excellent (80–89)
B+	Very good (75–79)
B	Good (70–74)
C+	Good (65–69) but minor corrections needed to be awarded the degree
C	Satisfactory (60–64) but minor corrections needed to be awarded the degree
D+	Marginal fail (55–59) but can be revised, resubmitted, and re-examined ^a
D	Clear fail (50–54)

a The thesis should not proceed for viva voce (oral examination).

Source: Adapted from *Makerere University revised guidelines for examiners of higher degree thesis* (2007).

of marginal failure, i.e., grade D +, the doctoral student may revise and resubmit the thesis, but a second failure means that the thesis will be permanently rejected.

Apart from the mark in [Table 10.2](#), the committee at the viva voce in the Ugandan case also make one of the following decisions after the public defence (depending on the student's oral performance), as outlined in the university examination report template:

- i. no corrections are necessary (Accepted as submitted);
- ii. minor corrections are required (Accepted with minor modifications);
- iii. major corrections are required and the thesis should be re-submitted;
 - a. to the satisfaction of the Internal Examiner;
 - b. for re-examination;
- iv. rejected.

Theses that have been graded A by the thesis examiners, and students who perform in congruence with this grade at the viva voce, will pass without corrections (decision i). Theses that have been graded as B or C lead to the decision that the theses can pass with minor corrections (decision ii), as long as the student's oral performance does not reveal further weaknesses, i.e., serious lack of independent thinking and understanding. In case where the thesis is graded D will pass with major corrections (decision iii) or lead to an outright failure (decision iv). However, in cases where the candidate passes the thesis examination with 60% and above but in the oral examination the candidate exhibits serious lack of independent thinking and understanding of the thesis and performs below 60%, he/she is required to undergo another public defence/viva voce.

In the Kenyan case, the recently formulated 'Guidelines for examination of theses' (2021) stipulate that assessment criteria should be sent to the examiners. However, we could not find any written documentation of these criteria, so we assume that this was still underway when our chapter was authored. Nonetheless, it is declared in the guidelines that all examiners' reports should be reviewed by

the Committee of examiners (see [Table 10.1](#)) who also evaluate the doctoral student's thesis work. Grades are not used in the Kenyan case, but the thesis either passes or fails according to similar decisions as applied by the defence committee in the Ugandan case, i.e.:

1. passed without corrections;
2. passed with minor corrections;
3. passed with major corrections;
4. outright fail.

After the public defence

After the public defence, the student is in both national cases thereafter contacted by the Dean/Director of Graduate studies who informs about the decision. Unless the thesis is subjected to major revisions, it is specified in the Ugandan university guidelines that the student is expected to finalise the (minor) corrections within three months. Otherwise, the student's performance will be assessed as a failure (School of Graduate Studies, 2010, p. 50). There are no stipulated timeframes for corrections in the Kenyan university guidelines. However, in both national cases, the final version of the thesis is reviewed by the main supervisor, or someone else in the committee of examiners, before it is submitted to the Dean for a recommendation for the award of a doctoral degree. Thereafter, in the Kenyan case, the Senate is required to approve the recommendation before the degree is finally awarded by the Associate Vice Chancellor of Academic Affairs (Guidelines for Examination of Theses Senate Doc, 2021, p. 6). In the Ugandan case, the School of Graduate Studies has a corresponding role in this final decision (School of Graduate Studies, 2010, p. 52). When the student has been awarded the degree, he or she is invited to the University Graduation ceremony, which is held twice a year in the Kenyan case and once a year in the Ugandan case.

Experiences of online doctoral examination

The COVID-19 outbreak caused a sudden closedown in most HE institutions all over the world including Kenya and Uganda. In our questionnaire, we asked for the respondents' experiences of online doctoral examination in the pandemic era. While it appeared that there was no consensus, their responses can be divided into three equally large groups: one-third felt that the doctoral examination process had become more difficult, one-third felt the doctoral examination process had improved, and one-third felt it had neither become more difficult nor improved. This even division held for both the Kenyan and Ugandan cases, although the responding Kenyans were slightly more positive to the online format.

Those who were positive about online doctoral examination pointed out that it was 'convenient', that 'the process is better understood by the candidates', and that the entire examination process had become more effective in terms of

time and money. Examiners now submitted their reports on time, and the oral defence could be organised soon thereafter. Also, the external examiners did not have to travel, which ‘lessens the cost’. However, those who were negative about online doctoral examination stressed that the process had become a mess, where ‘nobody seems to know where to begin and how to get to the end – it’s like trial and error’, and the whole virtual setting was subjected to technical issues where ‘zoom is complicated’ and the internet connection does not work. Also, some experienced that the ‘distance’ caused unengaged students and poor discussions. Seen from a pedagogical point of view, and in relation to quality assurance, these negative comments should be taken seriously since similar educational issues have been observed in Western online doctoral education too even before the pandemic started (Deshpande, 2016).

Suggestions for improving doctoral examination

According to the respondents in our questionnaire, doctoral examination practice could be improved in some respects in both countries. Respondents complained about the slowness of administration process, about the ineffectiveness of communication between the parties, and the delay in return of examination reports. Otherwise, clearer guidelines were requested in the Kenyan case, while in the Ugandan case, one staff member thought that ‘unnecessary policies such as the opponent and required publications’ should be removed. Clearly, the relationship between quality assurance and educational policies was not salient for all staff. However, a pedagogical perspective could be noticed from another Ugandan staff member who called for ‘more seminars and colloquium presentations for PhD candidates as they prepare for the defence’.

Summary

The key features of doctoral education and examination in Kenya and Uganda are summarised below:

Comparative key features at national level

- domestic doctoral education is still young in both countries. While Uganda has received an ample amount of international support in their capacity building at doctoral level since the beginning of the twenty-first century, Kenya is yet to receive similar support;
- both countries have recently formulated national and local regulations for doctoral education. In Kenya, the stipulations are more detailed at the national level, while in Uganda, they are more specific at the local level;
- in Kenya, there is one single criterion for admission – a Master’s degree – while Uganda provides four entrances for admission to doctoral education. Among these, one option is to submit at least four peer-reviewed and

published articles/book chapters/conference papers, which will form the basis for the doctoral thesis. However, usage of this option is rare in practice;

- in Kenya, it is regulated (beyond the thesis) that the doctoral student should have authored two refereed accepted/published papers before graduation.

Comparative key features at the local level

- in both the Kenyan and Ugandan cases, the student needs consent from the department and faculty to submit the thesis for examination;
- a public defence/viva voce is a part of the examination process in both cases;
- the constitution of the examination board is in principle the same in both cases, including one external examiner, two internal examiners, a chair of the committee, and other academic staff overseeing the examination. In Uganda, there is also an invited opponent;
- in the Kenyan case, the supervisor is one of the internal examiners whereas in the Ugandan case, the supervisor seldom has this double role;
- in the Kenyan case, the thesis either passes or fails. In the Ugandan case, grades are used for assessment. Unless there is a complete failure, the student may in both cases revise the thesis after examiners' decision.

Conclusion

Given that Kenya is now indexed as a lower-middle income country while Uganda is still on the World Bank's list of Heavily Indebted Poor Countries (HIPC)⁵, it can be concluded that there is no simple positive relationship between national economy and institutional research capacity building in doctoral education. However, in the long run, increased doctoral competence can make a difference in these two countries with respect to their national aspirations to be a part of the global knowledge society and reach the sustainable development goals. Such ambitions require societal leaders who understand complex phenomena, and embody critical and creative thinking at the highest levels, i.e., who possess the essence of a doctorate.

So far, a number of quality issues have been raised in previous studies on doctoral education in sub-Saharan Africa (Barasa & Omulando, 2018; Etomaru et al., 2021; Rukundo, 2020; Woldegiyorgis, 2020), although none of these have focused on doctoral examination. Based on our readings of the national guidelines in Kenya and Uganda, as well as the institutional guidelines of Makerere University in Uganda, and the University of Nairobi in Kenya, it can be concluded that the picture is not that gloomy when it comes to the settled procedures for examining doctoral students. In both national cases, the thesis is subjected to quality screening before submission and there are clear instructions for how the examination committee is constituted. Public oral examination/viva voce occurs in both cases, and written criteria exist for both assessment (although still underway in the Kenyan case) and grading. Accordingly, the need to further

develop doctoral education in these two countries is not an issue of how to improve doctoral examination in the first place, but rather how to improve the preceding educational processes until coming to this final point.

However, in relation to online doctoral examination, we do see quality issues when there are serious technical problems for some participants, and when the online format leads to unengaged discussions, which has been noticed in other studies as well (e.g., Deshpande, 2016). Even though some of our respondents thought that, e.g., the administration process had become more effective during the pandemic, and that the online format had reduced the examination costs (since no one had to travel), we hold that doctoral examination should involve more than just assessment – and it is certainly not a quick-fix. Indeed, doctoral examination is also an opportunity for meta-reflection and learning via both written comments (Kumar & Stracke, 2018), and deep dedicated discussions with the examination committee and public audience. Thus, seen from a pedagogical perspective, we close our chapter by concluding that authentic and memorable doctoral examinations should be of the highest priority.

Author contributions

All authors were involved in collecting documents and reviewing literature for this study, and the questionnaire was created by joint efforts. Empirical data were collected by Consolata Kabonesa in Uganda, and by Nelson Onyango in Kenya, and thereafter data were analysed by Hesborn Wao. Eva Brodin wrote this chapter in close dialogue with all co-authors.

Notes

- 1 The sample included seven public universities and three private universities.
- 2 *Makerere University*. Historical background. <https://www.mak.ac.ug/about-makerere/historical-background>; *The University of Nairobi*. UoN at 50: Our History. <https://www.uonbi.ac.ke/news/uon-50-or-history> (Both university homepages accessed 13 October 2021).
- 3 *University of Nairobi Research Archives*. Accessed 14 October 2021 at: <http://erepository.uonbi.ac.ke/handle/11295/49391#:~:text=The%20Board%20of%20Postgraduate%20Studies%20is%20committed%20to,Humanities%2C%20Biological%20and%20Biomedical%20sciences%20and%20Physical%20sciences>.
- 4 The statistics for 2021 at the University of Nairobi was not yet completed when this chapter was authored.
- 5 *The World Bank*. Data. Heavily indebted poor countries. Accessed 17 October 2021 at: <https://data.worldbank.org/country/XE>

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11

MALAYSIA

Sharon Sharmini

Introduction

The higher education (HE) system in Malaysia comprises both public and private universities. Public universities are funded by the government and are classified as research, focussed, and comprehensive universities. The focussed universities are further divided into technical, education, management, and defence universities. There are 20 public universities in Malaysia; five are research universities, four are comprehensive universities while the remaining 11 are focussed universities. The 47 private universities are funded by private organisations. Besides public and private universities, ten foreign international universities have set up branch campuses in Malaysia including Monash and Swinburne Universities from Australia and Nottingham University from the UK.

Public policy for HE in Malaysia is based on the Malaysian Higher Education Blueprint (MHEB 2015–2025) which mainly focuses on the production of qualified graduates in order to increase graduate employability and the placement of HE institutions in the top 25 of 50 countries ranked by *Universitas 21* (U21) in terms of research, enrolment, and employability (Ministry of Education Malaysia, 2015). But the heart of the blueprint is to create a nation of lifelong learners. Aligned to that, the emphasis on doctoral education is a key element and the number of doctorates produced on a yearly basis has increased from 701 doctorates in 2009 to 3,827 doctorates in 2019 (Ministry of Education Malaysia, n.d.).

This chapter provides insights into the doctoral education system in Malaysia including the national framework, the doctoral programmes and structures available, the nomination of examiners, and the details of the examination process involving the thesis and viva voce. This chapter is based on public data available on all the public and private universities that offer the doctoral programme in Malaysia.

The Malaysian Qualifications Framework

Doctoral programmes in Malaysia are governed by the Malaysian Qualifications Agency (MQA), which is supervised by the Ministry of Higher Education (MoHE). This body is responsible for implementing the Malaysian Qualifications Framework (MQF) as the foundation for quality assurance of Malaysian education as well as the reference point for criteria and standards for national qualifications.

Based on the MQF, there are eight levels of learning achievements – the doctoral degree is at the highest level. The outcomes of this degree (regardless of the different types of doctorates) are to ensure that the candidates are able to:

- i. demonstrate an in-depth understanding of the knowledge and original contributions to the field;
- ii. synthesise existing and new knowledge to develop new interpretations;
- iii. conduct the research ethically and rigorously with minimal supervision;
- iv. display intellectual leadership qualities and management skills;
 - v. communicate the ideas coherently in the research;
- vi. use suitable digital and analytical techniques to the research;
- vii. show commitment to lifelong learning and personal development.

(Malaysia Qualifications Agency, 2017)

Doctoral programmes and structures

The programmes and structures of doctoral degree vary as all HE providers are given the autonomy to design and deliver their programmes based on their institutional goals and the needs of the nation.

There are six types of doctoral degree programmes available in Malaysia and they are:

- a. doctoral degrees by research;
- b. doctoral degrees by coursework;
- c. doctoral degrees by mixed mode;
- d. doctoral degrees by retrospective or prior publication;
- e. doctoral degrees by concurrent or prospective publication;
- f. industrial doctoral degrees.

Doctoral degree by research or PhD by research

This doctoral degree by research is the most common degree and available in most universities in Malaysia (both private and public). The typical duration of study for full- and part-time candidates is three and four years, respectively. It is compulsory for candidates to take a research methodology course during their candidature and if they fail to complete this course within the study duration, they will not be able to graduate on time. For instance, in Universiti Putra

Malaysia (UPM), students are encouraged to take this course in the beginning of their first semester. Besides the research methodology course, some universities may require candidates to take a number of other related courses during their candidature.

Doctoral degree by coursework and mixed-mode

For both these modes, the candidate is expected to take a minimum of 80 credits worth of courses during the candidature. The duration of study for full- and part-time candidates is three and four years, respectively. A research methodology course is mandatory. For the doctoral degree by mixed mode, the ratio of coursework to dissertation or artefacts is within the range of 50:50 or 40:60 depending on the institutional requirements.

Doctoral degree by retrospective or prior publication

In this degree, the candidate's publications or any other equivalent works prior can be included in the submission for a doctoral award. The minimum duration of candidature for this mode is six months and must not exceed more than two years. It is important to take note that the role of the supervisor is to generally (i) guide the candidate in selecting or organising the published work for submission, and (ii) ensure that the thesis is consistent with the area of specialisation or expertise. In terms of the publications, it should only include five publications in high-quality journals, research-based chapters in books, creative works, or artefacts in the field. These publications must be published within the period of ten years from the date of submission.

In terms of the thesis, it should contain:

- a list of all scholarly published or equivalent works;
- acknowledgement of co-authors and verification of originality;
- a summary of the major findings of each of the published work;
- an introductory chapter, literature review, research methodology (where applicable), discussion, and conclusion which explains the significance of the contributions.

(Malaysia Qualifications Agency, 2021)

Doctoral degree by concurrent or prospective publication

For this degree, the candidate submits a thesis that has publications with multiple authors. The submission of the thesis should have the conventional thesis format. The candidate is expected to present a thesis that is interconnected with the published research papers or articles that show a coherent flow and demonstrate overall an original contribution to knowledge. The publications may include papers, chapters, scholarly editions of a text, technical reports, creative work in

relevant areas, or other artefacts. The final assessment still remains the same, i.e., the thesis and an oral examination (viva voce).

What seemed to be familiar with these publication modes (i.e., prior or concurrent) is that they represent the nature of *PhD by publication*. In fact, some universities (such as the National Defence University of Malaysia and Malaya University) acknowledged them as *PhD by publication* in their university websites. However, enrolment in the PhD by publication is limited to senior academics.

Industrial/professional/practice-led doctoral degrees

The industrial PhDs are, by and large, research degrees where the industry partners co-determine the direction of the doctoral study. Additionally, they may take the form of professional or practice-based doctoral degrees. These may be fully research-based or some combination of taught courses and thesis which are focussed on specific disciplines and may require experience in the practice or profession. But they all must still adhere to the general doctoral outcomes of the MQF with different orientations and as well as a written thesis and a viva voce.

Examination process

Despite the different types of doctorates, the examination still remains the same, i.e., the thesis and viva voce. In some institutions, such as UPM, candidates are expected to publish two research articles in ranked peer-reviewed journals before they are allowed to submit their thesis for examination. This type of thesis is known as *publication-based thesis* (Sharmini et al., 2015). Also, the most common type of doctoral PhD in Malaysia is the doctoral degree by research or PhD by research.

Criteria for examiners

The MQA (2021) stipulates that examiners should have a doctoral degree, have supervised students to graduation, and be research active (unless they are examiners from industry). Two examiners are usually nominated with one being external to the university.

The appointment of a Thesis Examination Committee

The Graduate School appoints the examination committee that comprises of a chairman, co-chairman, and three examiners. The chairman and the co-chairman of the Thesis Examination Committee are usually academic members of the department/faculty where the student is placed. The main roles of the chairman are to moderate the viva voce and submit a report of the examination to the Graduate School. However, a co-chairman is appointed to support

the chairman by preparing the examination report. It may be noted that the co-chairman is usually an early career researcher or lecturer who has less than five years of experience and/or has not graduated at least two Master's students by research or PhDs. The rationale is that this is an opportunity for these inexperienced academic staff to gain insights into the doctoral examination process. However, there are differing views of whether this is effective as discussed in the final section of this paper.

Of the three examiners, two are internal from the department/faculty in which the student is enrolled. Members of the supervisory committee cannot be examiners. It is mandatory that all internal examiners are at least at the level of an Associate Professor and have graduated a minimum of two to three Master's and a PhD student. These internal examiners do not need to have specific expertise in the area of the thesis that is being examined. The external examiner, on the other hand, is usually an international examiner who must be at the rank of Associate Professor or above with an H-index of 2 at least, research active, specialised in the topic of examination and have graduated doctoral students. The H-index is used widely in Malaysia as a metric to ascertain the peer esteem and credibility of an academic. The H-index refers to a metric system that evaluates the cumulative impact of the author's output and performance – in other words, it compares the author's publications to citations.

Assessment methods

Prior to their thesis submission, doctoral candidates are expected to take a comprehensive examination (CE) which aims to evaluate the students' knowledge in the area of study, their ability to integrate knowledge of research and/or theories pertaining to issues that are fundamental to the field of study and their understanding of relevant research design and methodology. Candidates can only do their CE after completing all coursework required by the programme and within two and a half years of cumulative enrolment, failing which their PhD candidature will be terminated. For a student in a part-time mode graduate study programme, the CE must be completed not later than in the seventh semester. The CE consists of both written and oral examinations and the student is required to pass both examinations with a minimum grade equivalent to a B grade based on holistic assessment (i.e., 65%). Candidates are not permitted to sit for the oral component of the CE until they have passed the written examination. The latter involves an assessment of the literature review and the methodology chapter with evidence of a pilot study. The oral examination should be conducted not later than 30 days after the written examination.

These interim examinations are conducted by the supervisory committee. The candidate is given two opportunities to pass them. The second examination, also by the supervisory committee, must be taken within 60 days after the first, and failure at the second attempt results in the termination of his/her candidacy.

Final examination for PhD programmes

The thesis can only be submitted with the approval of the principal supervisor. Additionally, candidates need to have completed an appropriate number of credits in research methodology courses and seminar presentations and in some cases to have publications in peer-reviewed journals. Also, a text similarity search report has to be included with the submission.

Thesis evaluation

The thesis is examined independently by the three examiners.

The outcomes of the thesis evaluation can be

- a. **Accepted with Distinction** – the research findings have either been published or accepted for publication in citation indexed journal, and require minimal improvement in spelling, grammar, and syntax. The candidate is given 15 days to revise the thesis.
- b. **Accepted with Minor Modifications** – the thesis requires reformatting of chapters, revision of literature, improvement in the research objectives or statements, insertion of missing references, amendment of inaccurately cited references, and other minor improvements including improvements in spelling, grammar, and syntax. The candidate is given three months to revise the thesis.
- c. **Accepted with Major Modifications** – the thesis requires extensive revision in the description of the methodology, statistical re-analysis of the research data, removal of research chapter(s), and re-discussion of results, including improvements in spelling, grammar, and syntax. Due to the extensive revision needed for the thesis, the candidate is given six months to revise the thesis.

The Thesis Examination Committee may also recommend the following:

- d. **Re-submission of Thesis** – the thesis is to be re-submitted if it did not meet the scope of the degree for which it is intended, the objectives of the research are not met and/or when there are obvious flaws in the experimental design and/or methodology, and therefore, requires additional experimental work or data collection. Re-submission of the corrected thesis and a Text Similarity Search Report must be made within a period of not more than two semesters or one year. Re-submission is only permitted once and if the candidate fails to submit within the specified time shall result in termination of candidature.
- e. **Re-submission of a PhD Thesis as a Master's Thesis** – the Thesis Examination Committee may recommend a doctoral thesis to be accepted for the award of a Master's degree if the thesis does not meet the scope of a doctoral thesis but is adequate for a Master's degree.

- f. **Rejection of Thesis (Fail)** – a candidate would be considered to have failed the examination if his/her thesis fails to meet the requirements of PhD or Master's academic level or found to have been plagiarised.

Viva voce

The viva voce is generally a closed-door event and is conducted when all the examiners' reports have been received. The examination can be conducted with at least two examiners present along with the Chairman of the Thesis Examination Committee. The examiners' reports are given to the chairman and co-chairman a week before the viva. The candidate and the supervisory committee do not have access to these reports. The supervisory committee can only attend the viva as observers and are not permitted to speak on behalf of the candidate in the event that he/she is unable to answer the examiner's questions. During this pandemic, vivas have been conducted online and in even with time zone differences, some external examiners have been able to be present virtually for the viva voce. However, there have been cases of candidates being unable to do their vivas due to the lack of internet access in their countries, which makes it difficult for examiners to assess their oral presentations. As an alternative, candidates make the effort to go to their main cities.

The candidate is considered to have passed the viva if he/she has successfully defended his/her thesis and has satisfied the examiners of his/her competency in the field of study. Even where the thesis has been accepted with or without modification, where examiners are not satisfied with the competency of the candidate, they can request for a re-viva within 60 days of the first viva.

Summary

Some key features of the doctoral degree in Malaysia are:

- the outcomes of the degree remain the same despite the various types of PhDs;
- a research methodology course is mandatory for all PhD candidates;
- six types of PhDs are offered and all are assessed through a written monograph and an oral;
- the viva in Malaysia is held behind closed doors and examiner reports are not shared with the candidate and/or the supervisory committee beforehand;
- supervisors are not allowed to examine the thesis and are silent observers in the oral;
- the thesis can only be submitted for examination with the approval of the principal supervisor;
- in most public and private universities, the thesis can be submitted only after two articles originating from the thesis have either been published (at least one) and the other is under review. Research universities require these publications to be in highly ranked journals;
- for appointment, the external examiner needs to at least have an H-index of two.

Conclusion and discussion

There are a number of drawbacks in the examination system in comparison with those in other parts of the world.

First, the appointment of examiners is somewhat precarious. This raises a question as to the issue of biasness when two examiners are from the same university – this is certainly not the best practices as reported in the literature on doctoral examination (Wellington, 2021). In a small department, this could be detrimental to the student when there are personality clashes among staff in the department. In the past, there has been anecdotal evidence of cases of victimisations of both the candidate and the supervisor.

Second, there is no consistency in the quality of examiners – the internal examiners are not required to have specific expertise to examine a thesis, other than being at the rank of an Associate Professor, while only the external is required to be an expert. Since the two internal examiners and the Chair are also from the same department or faculty, their views may over-ride the views of the international examiner. A consideration would be to appoint two examiners external to the university which seems to be the practice in many countries.

Thirdly, the idea of the comprehensive exam is contestable. It is odd for the supervisors to provide support for the first year and then examine the student and have the authority to fail the student! This again means that the supervisor is institutionalised with extreme power – if a student does not adhere to supervisory advice, the candidature may be terminated. This practice does not augur well for a doctorate, which aims to empower the student with higher order thinking skills. What seems to be the norm is a transmission model of supervision where the candidate is expected to be receptive to all supervisory advice.

Another drawback of the current system is that early career academics are not provided with mentoring experiences. In some systems, for example in New Zealand and South Africa, inexperienced examiners are usually nominated from the department and paired with experienced examiners which provides a form of professional development for future examiners. But requiring early career staff to prepare notes of the viva is certainly not research-informed nor evidence-based professional development, as most of these inexperienced staff struggle in comprehending with what is happening in the viva. Also, they may also not be familiar with the topic of examination. In most systems, this role requires expertise and wide experience. It is the Chair or the convenor who is an experienced senior academic, who moderates, negotiates, and writes the final report with the examiners (Kumar et al., 2020).

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12

NEW ZEALAND

Vijay Kumar and Rachel Spronken-Smith

Introduction

Doctoral degrees in Aotearoa New Zealand (NZ) are offered by all eight publicly funded universities. Moreover, doctoral degrees are also offered in some polytechnical institutes, and Te Wānanga o Aotearoa – which is an institution underpinned by tikanga Māori (Māori custom). Four types of doctorates are available in NZ. The first is the most common – the Doctor of Philosophy (PhD/DPhil) – based on a thesis, which may include publications or, where appropriate, creative work. A PhD usually requires three to four years of full-time study to complete and coursework is not required but may be included. The second are professional or named doctorates and refer to a doctorate in a specified field or discipline, with examples in business, clinical dentistry, education, fine arts, health, medicine, midwifery, music, nursing, and social work. These degrees typically include coursework related to the profession and then a body of research or scholarly professional or creative activity. The associated thesis is normally completed in at least two full-time academic years. The third, is higher doctorates (e.g., Doctor of Science or Doctor of Literature), which are awarded to work of special excellence conducted independently. The work would normally comprise extensive publications in quality-assured international journals or scholarly books over a period of at least 10 years, and the degree is only open to applications from alumni or academics at the particular university. Finally, NZ universities offer honorary doctorates, which are awarded for outstanding achievements and/or significant contribution to a university.

The NZ government subsidises PhD programmes for both domestic and international students. In 2006, the government introduced a policy that allowed international PhD students to pay domestic fees while resident in NZ. This policy led to a substantial increase in doctoral enrolments, with the proportion of international

students at universities increasing from 14% to almost 50% (Spronken-Smith, 2019). Distance education options are also available, but normally only for local students; international PhD students may be permitted to study by distance, but if so, pay international fees.

This chapter focuses on examination policies and practices for doctoral degrees in NZ universities; practices in other institutions may differ. A web search was mounted for information relating to doctoral examination policies and practices.

The national framework for doctoral examination

Several agencies oversee doctoral education in NZ. The Tertiary Education Commission is a Crown agency that oversees the tertiary education sector, while the Ministry of Education has oversight of all education. The New Zealand Qualifications Authority (NZQA) was established by the *Education Act* 1989 and led the development of a New Zealand Qualification Framework (NZQF), which quality assures programmes of study. Initially, the NZQF excluded qualifications from universities, since these were overseen by the NZ Vice Chancellors' Committee, now known as Universities NZ –Te Pōkai Tara, via the Committee of University Programmes. However, in 2011, an amendment to the *Education Act* 1989 (NZ) required all qualifications to be listed on the NZQF, although the Committee of University Programmes continues to oversee the quality of university qualifications.

Another body that regulates the standards of university qualifications is the Academic Quality Agency for New Zealand Universities (AQA), established in 1993 by the New Zealand Vice-Chancellors' Committee. The AQA is an independent body that supports universities in their achievement of standards of excellence in research and teaching through regular institutional audit and promotion of quality enhancement practices across the sector. Audits are conducted every 9–10 years and require the institution to undertake a self-review and report on, amongst other aspects, doctoral education. The expectation is that universities will adhere to good practice, with the audit panel making commendations and recommendations – the latter of which require a response regarding how the policy and/or practice will be improved.

The final group with oversight for doctoral education in New Zealand is the Directors and Deans of Graduate Studies. This is a collegial group who meet regularly to share and promote best practices in doctoral education. With only eight universities, it is possible to achieve quite consistent approaches and policies for doctoral education.

As noted by Spronken-Smith (2019), there have been few significant reforms in doctoral education in recent years, except for the fee policy to attract international PhD students noted in the introduction earlier, a proliferation of professional doctorates and the introduction of creative components to PhDs.

Definitions of the doctorate and its assessment

The NZQF lists qualifications according to levels, and the doctorate, at level 10, is the highest. The doctorate consists of 360 credits, equivalent to three years of full-time study; it is defined as a research degree ‘whereby the individual becomes an increasingly independent scholar who makes a substantial and original contribution to knowledge’ (New Zealand Qualifications Authority, n.d., para 1). The doctorate is pursued under supervision by experts in the discipline.

In NZ, there are variations in the assessment criteria for the different types of doctorates:

- for the PhD, the thesis forms the entire body of work that is assessed for the award of the doctorate. As noted earlier, the thesis may contain publications and/or creative work;
- for professional doctorates, an individual is usually required to pass both the coursework and the thesis component. As for the PhD, the thesis component may include publications and/or creative work;
- for higher doctorates, a body of work comprising publications and/or creative work is assessed by leading international experts;
- for honorary doctorates, no examinations are involved – rather the degree is bestowed upon the individual for their achievements.

The structure of doctoral assessment and examination

The first phase of a doctoral assessment in NZ universities is the confirmation phase, which is usually completed during the first year of candidature. It is typical for universities to require PhD candidates to complete a substantial draft of the literature and methodology chapters and also obtain ethical approval (if required). Once these conditions are satisfied, the candidate is often required to give a departmental presentation, or in some cases present their proposal to a confirmation committee. Completing the assigned tasks within the time frame and at an expected level are fundamental for candidature confirmation. Assessment at this stage is predominantly formative. A candidate who does not meet the requirements in the first year is normally given an extension of up to six months – failing which, the candidate is withdrawn from the doctoral programme. Professional doctorate candidates are usually required to complete and pass coursework as part of their confirmation requirements.

Following this initial confirmation assessment, formal meetings are held every year to monitor progress and provide support; frequent supervision meetings occur throughout candidature. For the PhD programme, there is no further summative assessment until the final examination, which is in two parts. The first is the assessment of the relevant doctoral outputs, such as the thesis and any associated creative work (if relevant). In all eight universities, a PhD thesis should not exceed a total of 100,000 words in length, exclusive of all appendices

and bibliography, whereas most professional doctorates are limited to 70,000 words. The thesis may include publications co-authored with the supervisors, and in such cases a co-authorship form detailing the contribution of each author should be appended. Candidates in the creative arts or design disciplines may present a scholarly creative component to be assessed with their thesis. The final assessment for professional doctorates normally focuses on the thesis or exegesis and may include a creative component. When an exhibition or live performance is involved and it is not possible to re-enact the live event, examiners will be referred to the audio-visual documentation of the event. As for the PhD process, the outputs for professional doctorates are evaluated by internal and external examiners.

The second form of assessment is the oral examination, which is required for most PhD examinations and some professional doctorate examinations. A convener who is not part of the supervisory team oversees the thesis examination process, ensuring it is fair and objective. The convener facilitates the oral examination and achieves consensus among the examiners on the outcome and any required amendments. The convener is not required to be an expert in the subject matter of the thesis under examination. Depending on the university, the convener may or may not be from the candidate's department. Variations exist to this second form of assessment in the sense that in some NZ universities, oral exams are held irrespective of the outcome of doctoral output evaluations, while in others, the oral is only held when examiners independently initially recommend that the thesis should pass. If examiners are of the view that the thesis requires further supervised research or that major revisions are warranted, the candidate will not usually proceed to the oral. In such cases, the thesis has to be revised and resubmitted for examination within 12 months. Following the oral examination, a thesis or exegesis may be accepted as it is, require minor or major amendments, require resubmission for a further examination, or be rejected for the award of the degree.

Making submissions for examination

The PhD thesis is typically submitted within no fewer than three years and no more than four years of full-time study from the start of candidature. For professional doctorates, the coursework typically occupies a year, and the thesis or exegesis is expected to be submitted within two years of full-time study.

The first step in the submission process is that the candidate should give a notice of intention to submit, which ranges from between one to three months among NZ universities. This triggers an alert for supervisors to nominate the examiners. Before a thesis is submitted, the candidate and supervisors are generally required to agree that the thesis is ready for submission. In most NZ institutions, the candidate has the right to request that the thesis be examined even though the supervisors may not believe it to be of a suitable standard. One university stipulates that the supervisor cannot veto submission against the student

will. In some universities, reservations are explained to the students in writing and the students are required to certify that the reservations have been sighted. However, supervisors are allowed to comment on submissions. Supervisors usually write a letter to the Graduate School providing details on the candidature and attesting that the thesis has been conducted under their supervision. At times, supervisors also indicate concerns in relation to supervision and submission. This letter is confidential to the convener, and the convener may highlight substantial issues, if necessary, when achieving a consensus result. In one university, the supervisors' comments on the submission are visible through an online system to the candidate. Any theses submitted for examination should be screened for plagiarism before being sent to the examiners; some institutions do this as part of submission, while others rely on candidates to check prior to submission. If sensitive intellectual property issues are present, the supervisors are required to send confidentiality agreements to all examiners prior to the thesis being examined. All universities allow digital submission of theses. Theses in NZ are normally written in English, but submissions may be in te reo Māori (assuming appropriate supervisors and examiners can be found) or in other languages, but only in exceptional circumstances.

Criteria for the nomination of examiners

All NZ universities stipulate that the examiner should be suitably qualified, preferably with a PhD. Examiners should have experience in the topic and/or the methodology of the thesis being examined, and they are also expected to be active in research and to have international standing with regards their publications, scholarly impact, and current relevant research in the topic being examined. While a PhD qualification is preferred, under exceptional circumstances, an examiner with a prominent level of research experience may be appointed. For PhDs with a creative component, at least one examiner must have appropriate experience and a record of scholarly creative research outputs when examining a thesis with scholarly practice work. Examiners of professional doctorates must have a doctoral degree or equivalent knowledge and experience, with a record of scholarly, professional, or creative practice research outputs. Examiners may also be required to attend events, as stipulated by the regulations of doctorates involving creative practice.

Policy on the number of examiners for a doctorate varies between universities. In two universities, three examiners are nominated: one is internal to the university, another is an NZ examiner and the third is an international examiner. An international examiner is required in all NZ universities as it is arguably good practice in terms of calibrating the standards of doctoral awards. In universities where only two examiners are required, one is external to the university but from NZ and the other must be an international examiner. Other NZ universities do not allow an internal examiner, and their policies clearly stipulate that an examiner must not have had any appointment, paid or honorary, at the university

during the candidate's enrolment in the degree under examination. Another university policy states that it cannot appoint examiners who have recently been employed (fewer than five years) by the university. Common in all NZ universities is the requirement of an NZ and an international examiner.

In universities that have three examiners, two of the examiners must have examined more than three doctoral theses. Some universities require at least some experienced examiners on the panel, likely because inexperienced examiners may not be the best judge of quality or are more critical (Kiley & Mullins, 2004; Mullins & Kiley, 2002). Additionally, inexperienced examiners tend to focus more on assessment than the provision of formative feedback (Kumar & Stracke, 2011). However, some universities do appoint inexperienced examiners. In one university, inexperienced examiners are mentored by a senior experienced examiner, while in others, inexperienced examiners are paired with experienced examiners – this seems to be an ideal opportunity for professional development to become an experienced examiner. In another university, a mentor examiner is appointed to guide first-time examiners through the examination. Inexperienced examiners are from the department where the thesis was undertaken. It has also been reported that experienced examiners tend to act in a supervisory role by providing more feedback when the theses only marginally meet the required standards (Holbrook et al., 2014). This is also a unique learning opportunity for inexperienced examiners.

Responsibility for nominating and approving examiners

In all NZ universities, it is the supervisors who nominate the examiners. Most of these nominations are endorsed by the heads of department and/or the dean before they are finally approved by the graduate school, the board of graduate studies, or delegated authorities.

Most universities require that supervisors consult students on the nomination of potential examiners, but with a condition that the candidate may not be advised of the identity of the examiners selected. Candidates also have the opportunity to indicate the name of anyone they believe should not be appointed as an examiner and provide reasons in writing. In one university, subsequent to the examiners' nomination, the candidate is informed who the examiners are, and they may present a case to the dean of postgraduate to not appoint the examiner(s).

The examination

Once the candidate has submitted the thesis and all examiners have been confirmed, the thesis is sent electronically to the examiners and the convener. Examiners need to sign a confidentiality agreement before the thesis is sent to them if an embargo has been approved. The examiners submit independent reports to the graduate school, which include comments on strengths and

weaknesses of the research, identify any required amendments, and suggest an outcome. For doctoral degrees that do not require an oral, the examination convener facilitates a consensus result amongst the examiners.

For doctoral degrees that do include an oral examination, a unique feature in NZ is that the examiner reports are provided to the candidate and the supervisor before the oral – between five days to two weeks prior. Another strong feature is that most NZ universities require examiners to list the questions they would like to ask in the oral – these questions are provided to the candidate and supervisors, thus giving them the opportunity to prepare for the oral. However, additional questions may be raised during the oral. It is only in one NZ university that candidates are not provided with the questions prior to the oral.

Oral examination procedures vary between institutions. In some institutions, holding an oral depends on the preliminary view of the examiners: if the examiners are of the view that the thesis meets the standards of a PhD, then an oral is held. Alternatively, if the examiners are of the view that the thesis has not met the required standards, candidates are asked to make revisions prior to an oral being held. In these circumstances, it is the dean or the board of graduate studies that determines if a thesis should proceed to an oral examination. There are variations in the scheduling of the oral, with some universities scheduling the oral two to three weeks after all examiners' reports have been received. Other universities schedule the oral at the time of submission, setting the date two to three months ahead to ensure that reports are received in a timely manner with no undue delays in the examination process.

The presence of examiners in the oral varies too. In some cases, all three examiners will participate and question, while in other cases, the university appoints only one of the examiners as the designated oral examiner. The supervisors' presence in the oral examination ranges from being *required* to being *invited* to attend. Even who invites the supervisors varies – in some universities, the graduate school invites the supervisory team, while in others the convener invites the supervisors with the consent of the student. In some institutions, candidates are allowed to bring supporters to the oral examination, while in others they are not. In one university, the role of the support person is to provide a culturally appropriate welcome before the examination commences. Supervisors and support people act only as observers, but supervisors may be asked by examiners to provide comments if necessary.

What seems unique in the NZ oral in the first instance is the term used – 'oral examination'. Contrary to the oral being described as a 'defence' in some traditions, the oral is viewed as more of a collegial discussion that aims to provide a positive learning experience for the candidates. A second unique feature is the presence of a convener or chair of the oral examination in all NZ institutions. The convener, an approved independent facilitator to oversee the doctoral examination process, is nominated by the candidate's department or school and appointed by the graduate school. Most conveners are at the professorial or

associate professorial level and have wide experience in supervising and examining doctoral theses.

There have clearly been instances of negative experiences in oral examinations in the United Kingdom (e.g., Sikes, 2017) and elsewhere (Tan, 2017), for example, the existence of interrogatory examiners has been noted as have circumstances of the oral being considered a battleground where attacks are common. The scenario is very different in NZ institutions. A recent study of the convening practices in an NZ university (Kumar et al., 2020) indicated that conveners focus on a duty of care. The conveners play a significant role in ensuring that the candidate has a positive experience of the oral examination by providing academic guidance to the candidate, and this includes advice on addressing the examiner comments during the oral presentation. Some conveners have been described as a shield for the candidate because they protect the candidate from undue interrogation. The orals are often recorded, and copies of the recording may be provided to the candidate to help with the revisions. The convener is responsible for checking minor amendments or works in consultation with the internal examiner to check more major amendments. The oral examination process also includes the examiners recommending whether to nominate the thesis as 'exceptional', which requires all examiners to agree on the exceptional nature of the thesis.

The final outcome of the doctoral examination may be any one of the following:

1. Accept as is and award the degree.
2. Award the degree after minor corrections have been completed.
3. Award the degree subject to amendments being completed.
4. Revise and resubmit for a second examination.
5. Reject for the award of the degree and recommend consideration of a lesser degree.
6. No degree be awarded.

Further details on each of the award categories are provided in the following.

Pass or accept

- a. The student must address any typographical errors and minor editorial matters.
- b. The student must make minor corrections only (as identified by the examiners). This includes more than superficial editorial corrections. The candidate may take between one and three months for these corrections.
- c. The student must make amendments (as identified by the examiners). These include more substantive amendments and may include rewriting a chapter, reorganising material in the thesis, improving or clarifying an argument, and omitting or deleting sections of the thesis.

Normally, a candidate has between three and six months to make these amendments.

Revise and resubmit

- a. The revise and resubmit outcome means the student does not meet the criteria for examination.

This outcome requires the candidate to undertake substantive revisions within a period of 6–12 months to submit the thesis for examination. A thesis can normally only be revised and resubmitted once for examination, that is, at the next examination the thesis either passes or fails.

Typically, if examiners agree prior to an oral examination that the thesis needs revising and resubmitting, examiners do not require the oral examination. However, some universities do allow an oral if the candidate requests one.

Fail or reject

- a. The student is awarded a lesser degree.
- b. A degree is not awarded.

Examiners may differ in their recommendations of the overall outcomes or, in the case of a failure, they may disagree about whether or not to award a lesser degree. The convener may seek more information and/or clarification from the examiners and/or supervisors with any aspects of examiners' reports or recommendations. For all examinations, final decisions are recommended to a board, senate, or council, and usually the dean of the graduate school has delegated authority to confirm a result. When a consensus cannot be reached, a referee may be appointed.

NZ universities provide detailed information on the examination process both for the candidates and administrators of the examination process. Supervisors are also regarded as a source of guidance. Workshops on the examination process are provided in all universities for both supervisors and candidates – these include topics such as how examiners assess a thesis, convening a doctoral examination, preparing for the oral examination, and expectations of examiners.

Impact of COVID

It should be noted that examiners may be informed to take into account delays and disruptions as a result of COVID-19 without compromising the standards for the award. In particular, examiners are informed that there could have been disruptions that necessitated changes to the candidate's research plans. Candidates (with endorsement by supervisors) can provide information regarding how the research was altered as a result of the disruption. Candidates are advised to discuss any changes that have occurred due to COVID-19 such as change of scope, scale, topic, focus; limitations in relation to data collection, access to necessary

literature or archival materials, laboratories, field sites; disruptions as a result of lockdown; mental health considerations, etc.

Summary

The key features of the NZ system are summarised as follows:

- all NZ universities adhere to the definitions of the doctorate as stipulated by the NZQF;
- supervisors are specifically prohibited from examining their own students;
- at least one of the examiners must be external to the institution and another must be an international examiner;
- in seven of the eight NZ universities, candidates and supervisors see the preliminary examiner reports in advance of the oral examination;
- in most NZ universities, the list of core questions that will be asked in the oral examination is given to the candidate and supervisors prior to the oral;
- conveners take on a duty of care to ensure a positive examination experience for the candidate;
- the NZ system offers valuable professional development opportunities to candidates, supervisors, examiners, and conveners.

Conclusions

There are several unique practices that we can gather from the doctoral examination practices in NZ. Candidates are strongly encouraged to seek guidance from the supervisors before submission of their thesis. Examiners, supervisors, and candidates are provided unambiguous information on policies, and numerous research-informed workshops are conducted to support all stakeholders. A unique feature in some universities is the appointment of inexperienced examiners, usually someone internal to the department, and they are provided a mentor to guide them through the doctoral examination. This is important for the professional development of the inexperienced examiner. The support that is provided to the candidate and the professional development opportunities for supervisors, examiners, and conveners clearly indicate that all NZ universities aim to render the doctoral examination process a positive experience for the candidate.

All these support mechanisms, transparent policies, and professional development opportunities based on research-informed practices, as well as the notion of duty of care provided by stakeholders, have meant that in most NZ universities, student satisfaction of the doctoral experiences, and potentially the doctoral examination processes, are rated extremely highly. It is thus no surprise that one of the NZ institutions has reported very high doctoral completions rates (Spronken-Smith et al., 2018).

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RUSSIA

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Introduction

In Soviet times, higher education in Russia was institutionally separated from research (Smolentseva et al., 2018). Universities were responsible mainly for educational activities while research institutes focused on research and scientific training (Maloshonok & Terentev, 2019). Today, that policy has been reversed and the majority of all doctoral candidates (86%) study in universities, with 13% in research institutes of the Russian Academy of Science, and 1% in other organisations (Federal State Statistics Service, 2021). In all, over 1,220 institutions offer doctoral programmes (Bekova et al., 2020), but in recent years there have been steep declines in both doctoral enrolments and doctoral graduations; in 2010 there were 157,437 doctoral candidates but only 87,751 in 2020 while over the same period the number of candidates who successfully defended their theses fell from 9,611 (28.5% of all candidates who had completed their course of study) to 1,245 (8.9%).

This chapter focuses upon the system of doctoral examination in Russia. In particular, it looks at the national framework, assessment of the educational coursework, the pre-examination of the doctoral thesis, the appointment of a Dissertation Council, the final examination, and ongoing challenges and current trends.

The national framework for doctoral examination

Historically, the doctoral degree, as well as doctoral examinations in Russia, has been controlled by the state, specifically by the Ministry of Science and Higher Education through the Higher Attestation Committee (HAC), the organisation established for state scientific certification. The members of HAC are rectors,

vice-rectors, heads of departments of Russian universities, and distinguished Russian researchers.

With regard to doctoral examination, the framework is mainly defined by the Decree of the Russian Government of 24.09.2013 N 842 ‘On the awarding of academic degrees’ (together with the ‘Regulations on the awarding of academic degrees’). According to the Decree, the thesis is an independently prepared research qualification work that contributes to the solution of a scientific issue and the development of existing or new research areas. Russian doctoral programmes are predominantly academically oriented and are aimed to prepare personnel for academia.

The Decree sets the requirements and procedures for achieving the two Russian doctoral degrees: Candidate of Science (*Kandidat Nauk*), which is the equivalent of the PhD and the higher Doctorate of Science (*Doktor Nauk*), which is the equivalent of the habilitation in Europe or higher doctoral degrees (e.g., DSc.) elsewhere. The ‘*Doktor Nauk*’ degree can be awarded only after obtaining the ‘*Kandidat Nauk*’ degree. To obtain the ‘*Doktor Nauk*’ degree, a doctoral candidate has to publish at least 10–15 publications over a period of years prior to declaring candidature and has to prepare a dissertation. A Candidate of Science on the other hand can be taken after completing a bachelor’s or master’s. *Doktor Nauk* holders have wider opportunities for promotion in academia and have advantages in research grant competitions. Moreover, in most Russian universities and research institutes, only *Doktor Nauk* holders can take a professor’s position or be a supervisor of doctoral candidates. The number of awarded *Doktor Nauk* degree holders is significantly lower than the number of Candidate of Science degree holders: in 2020, there were 63 new Doctors of Science and 1,245 new Candidates of Science (Federal State Statistics Service, 2021). In this chapter, the focus is upon the examination system for the Candidate of Science as it is the most widespread type of programme as well as being the PhD equivalent.

While the national framework continues to apply to the vast majority of doctoral providers in Russia, it is important to note that in 2016, the government attempted to make the system of doctoral examinations less centralised and give greater autonomy to some institutions. In 2017, Moscow State University and Saint-Petersburg State University became the first institutions to be given the power to award their own degrees and make their own requirements and procedures for the doctoral examination. Currently, 25 universities and five research institutes have similar autonomy over doctoral studies and examinations.

Assessment of the educational coursework of doctoral training

Doctoral candidates are required to attend classes and gain credits through ongoing and candidacy examinations relevant to their studies. In all but the autonomous institutions, the final assessment is undertaken by the state and it includes a major examination, research presentations, and a public defence of scientific reports based on the thesis materials (equivalent to the comprehensive

and qualifying examinations in the US system). If they are successful, on completion of their training doctoral candidates are awarded a diploma and gain the qualification 'Research Lecturer'.

The pre-examination of the thesis

The first stage of doctoral examination is the pre-examination. To submit the thesis to pre-examination, a doctoral candidate needs to meet the requirements for obtaining a doctoral degree as defined by the HAC or the university/department in the case of autonomous *organisations with special status*. These requirements include the quality and quantity of research output and educational performance during the doctoral study. Thus, prior to pre-examination, a doctoral candidate should have published at least two or three articles in a HAC – or university-approved list of journals, and presented the results of the research to at least one scientific conference. For the pre-examination, a doctoral candidate should submit the completed dissertation and a summary of dissertation research.

The pre-examination takes the form of an open seminar held in the department that is responsible for the doctoral programme or in a joint seminar involving the professors and researchers of several departments specialised in similar research areas.

In the first stage of the pre-examination, the dissertation and the summary are reviewed independently by at least two reviewers, who were appointed in advance by the department. Some institutions require that at least one of the reviewers works in an external organisation, others require that at least one reviewer has a *Doktor Nauk* degree. During the pre-examination, a doctoral candidate presents the objectives, rationale, methodology, main results, and contribution of the dissertation research. The pre-examination is also attended by five examiners who have doctoral degrees. All participants can ask questions and take part in the discussion about the research. At the final stage of pre-examination, the reviewers write a report. Taking the report into consideration, the five examiners evaluate the quality of the submission, provide recommendations for improvement, and vote for one of the following options: (1) proceed to the final examination with the current version of the thesis or with minor revisions; (2) proceed to the final examination with major revisions; (3) make major revisions and go to the pre-examination again; and (4) do not proceed to the final examination.

If the pre-examination committee does not recommend doctoral submission to the final examination at all, procedures for its further consideration are defined by the academic councils of universities or research organisations.

A dissertation council

Once the candidates pass the pre-examination, the next stage is the final doctoral examination which is conducted by an independent Dissertation Council. The latter is a special body created in universities or institutes that reviews dissertations and conducts the defence procedure.

In organisations operating under the national framework, the Dissertation Council consists of at least 19 members, and a minimum of 50% of them should work in the host institution. Council Members are nominated by institutions and confirmed by the Ministry; for confirmation they need to have a *Doktor Nauk* degree obtained in Russia or an equivalent degree obtained abroad and also have records of publications, conference presentations, and citations during the previous five years. However, organisations that have been granted autonomy may choose to form the Dissertation Council without the Ministry's approval and also with fewer members or with members who have only *Kandidat Nauk* degrees.

Each university or institute can have a single Dissertation Council or several Councils covering different fields of research. In fact, the number of organisations providing doctoral programmes significantly exceeds those with doctoral awarding powers. As a result, a unique feature of doctoral examination in Russia is that some students study in a doctoral programme at one university but defend their thesis at another and applicants have the right to submit the thesis for defence to any Dissertation Council in the country.

The oral defence

The final examination of doctoral candidates takes the form of an open public oral defence. The announcement about the oral defence is published on the university website. The dissertation and the summary of dissertation research is made available online at least two months before the defence. The names of the Dissertation Council members and all reviewers are made known to the public in the announcement. Official reviews on the final submission are also available online several days before the defence. Anybody can submit a review for the doctoral thesis. All received reviews should be announced during the oral defence. At the beginning of the defence, members of the Dissertation council vote for the chair and the secretary of the examination. Then, the secretary announces the agenda of the meeting and the information about the doctoral candidate (educational background, research experience, etc.). Doctoral candidates have about 15–20 minutes to present their dissertations. After that, all participants, including members of the public, can ask questions about the contents of the dissertation. Then the supervisor gives a brief overview of the doctoral candidate as a researcher without commenting on the quality of their dissertation research. After that, reviewers who assessed the thesis provide an evaluation of the dissertation and the doctoral candidate responds to their questions and critical comments.

Then council members can make a judgment on the quality of research and its contribution. Finally, the council members anonymously vote (the supervisor is a non-voting member) and choose one of two options: (1) recommend the award of the doctoral degree; and (2) do not recommend the award. If the

dissertation council votes for the second decision (reject), the next attempt to defend a thesis cannot be made for a further year. However, such situations are extremely rare because, before final examinations, members of the Dissertation Council review and provide recommendations for revisions for the submission at least twice. As a rule, they do not allow a doctoral candidate to confirm a date of defence before they are sure that a submission will be successfully defended.

The oral defence (face-to-face or online because of the epidemiological situation in 2020) is the final stage of the doctoral examination at universities with their own doctoral degrees. However, in other universities, the decision of the Dissertation Council needs to be approved by the HAC, which can take several months after the oral defence. On rare occasions, and usually relating to plagiarism, HAC may decide not to award a degree after a successful defence or to cancel the decision of the Dissertation Council. Although information about such cases is available online on the website of HAC, there is no aggregated data about rejected dissertations.

Summary of key points

- The Russian system of doctoral examination is state-regulated by the HAC. HAC defines requirements, rules, and procedures of doctoral examination and has the right to cancel awarded academic degrees. Today, only a few universities and research institutes are allowed to award their own academic degrees;
- Before a defence, a Dissertation Council reviews and discusses doctoral submission several times. A defence is appointed only when examiners are sure that the dissertation will be successfully defended;
- The final examination is open for public participation. Anybody can join this event, ask questions, and comment on the dissertation quality and contribution;
- The final submission (dissertation and the summary of dissertation research) and official reviews on the final submission are available online before the defence. The names of all reviewers and the Dissertation Council members are made known to the public in the announcement.

Discussion and conclusion

The current system of doctoral examinations in Russia is mainly rooted in the Soviet education system, which is characterised by a high level of state regulation and standardisation of procedures and requirements. However, there are some important trends related to the transformation of this system in the last several years.

The first is related to the increase in the level of institutional autonomy in establishing the regulations and procedures of final examinations. The most remarkable reform was in 2016 when a group of top national universities and research organisations were given the right to award academic degrees, which allowed them to define their own requirements and procedures for final submission and examination. As noted in the introduction of this chapter, a number of institutions have been authorised to establish their own regulatory regimes for the doctorate. However, despite the autonomy given, few organisations define their own requirements and procedures—most abide by the regulations stipulated by the HAC (Pakhomov et al., 2019). By the end of 2019, only 18 out of 25 organisations with autonomy had formed their own dissertation councils, and only 5 organisations had started to form separate dissertation councils for each defence.

This reform was evaluated negatively by the Ministry of Science and Higher Education as well as by the wider academic community. Critics remarked upon the incomplete nature of the implementation of the reform and diminished performance indicators of those organisations that received the right to award their own degrees compared to the pre-reform period (Pakhomov et al., 2020). A large-scale survey of researchers in higher education and research institutions also showed a low level of trust in degrees awarded by organisations compared to traditional degrees awarded by the HAC (Gusev & Yurevich, 2021). Thus, the future of this reform is in flux and largely depends on the dynamics of ‘pilot’ organisations’ performance indicators over the long term.

The second trend is related to greater flexibility in the rules and regulations regarding the final examinations. In 2021, the HAC adopted new regulations for the Dissertation Councils that introduced two main changes.

One was to enable the conduct of defence procedures in a hybrid format allowing the participation of a doctoral candidate, examiners, and other participants via face-to-face or online modes. Before the COVID-19 pandemic and even during its first stage (between March 2020 and September 2020) online and even hybrid modes of defences were forbidden. It resulted in a situation, where at least 80% of the defences which were planned to be conducted in March–May 2020 were postponed (Zhuchkova et al., 2020). Only three organisations continued organizing defences during this period. They represent the group of universities which had their own awarding powers and were able to produce local normative acts regulating the possible modes of defence. Other universities and research organisations were forced to wait for the Ministry to change the regulations. Besides the problems caused by the pandemic, the impossibility of conducting defences online or in a hybrid mode created difficulties in finding qualified reviewers for the theses, since they were required to participate in the defence procedures face to face. From September 2021, the HAC allowed all organisations to carry out defences in a hybrid form with the requirement that

a doctoral candidate, head of the dissertation council, and at least half of the dissertation council members should participate offline. That could make the organisation of defence procedures easier in the future and increase the quality of the final examination enabling the participation of experts from different regions and countries online.

The other was changes in the requirements for Dissertation Councils, namely reducing the minimum quantity of members from 19 to 11, and setting the minimum number of members with the *Doktor Nauk* degree of five. These changes make the formation of Dissertation Councils easier for organisations and empower them to include a larger number of young scholars in the dissertation councils. It could help to reduce the number of organisations, which have doctoral programmes but do not have dissertation councils, and to refresh the composition of dissertation councils by the inclusion of scholars who have not received the *Doktor Nauk* degree but are actively engaged in research.

A further trend relates to the movement towards the diversification of requirements and procedures depending on the field of research. In 2010, a federal law 'On Higher and Postgraduate Professional Education' fixed different normative periods of doctoral training depending on the majors (three years for majors in humanities and social sciences, and four years for STEM majors). Requirements for the publications of doctoral candidates also differ depending on the field of research. While doctoral candidates in social science and humanities prior to defence should have no less than three publications, for candidates in STEM majors the minimum number of publications is two. Currently, there are discussions on the demand for corrections of these regulations. They touch upon questions regarding the list of majors, which should have longer normative periods and differentiation of requirements for publications across the majors. For instance, there are proponents of shortening the normative period for STEM majors. Their main argument is that the average time-to-degree period is shorter in these majors compared to majors in social sciences and humanities. However, the general principle of diversity in requirements depending on the area of research is not questioned, and further steps in its implementation could be predicted.

Overall, the system of doctoral examinations in Russia is experiencing a shift towards a more flexible and diversified model, which better fits the changing nature of doctoral education. However, more effort should be made to enhance the quality of examination procedures. First, special attention should be paid to the professional development of the examiners. There are many critics about the competencies of the examiners and their style of communication with doctoral candidates during pre-examination and final examination. Particularly, the modern system of the final examination (defence) is criticised for its ritual rather than substantive character (Demina, 2005). Second, the implementation of institutional guides, which will explicitly present the criteria for the evaluation of the quality of theses, could help to make the examination procedures more transparent and predictable to doctoral candidates. Finally, the revision of

the requirements for members of dissertation committees by strengthening the weight of research engagement in the narrow field of research rather than formal status and qualification (such as obtaining the ‘*Doktor Nauk*’ degree), could help to enhance the quality of examinations.

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14

SOUTH AFRICA

Eli Bitzer

Introduction

The University of the Cape of Good Hope was established in 1873, received its Royal Charter in 1877, and was modelled on the University of London (Carruthers, 1992). This was the start of public higher education in South Africa. Currently, the university system consists of 11 general academic universities (of which five are considered ‘research intensive’), nine universities of technology, and six comprehensive universities (i.e., universities offering both general academic and technological qualifications). Doctor of Philosophy (PhD) programmes are heavily concentrated in the general academic and research-intensive universities.

In South Africa, the first doctorate (Doctor of Laws) was conferred in 1899, while the first Doctor of Science degree was awarded in 1906. By the 1920s, PhD degrees were offered by several established universities (Herman, 2009, 2011, 2015; Murray, 1997).

Like many other African countries, colonial rule and a long-divided history accounted for barriers to the production of knowledge. For many years, race-based apartheid not only excluded many public higher education institutions from offering research degree programmes but also prevented most people from studying for higher degrees.

With the introduction of democracy in 1994, the subsequent transformation of higher education included enrolment expansion in postgraduate programmes (Department of Education, 1997). Such programmes were aimed at providing graduates to support social and economic development, and also supplying universities with appropriately qualified academic staff (Herman, 2011).

Over the past decade, there has been a rapid growth in doctoral programmes and doctoral graduates.

From 2009 to 2018, the growth in annual doctoral completions nationally exceeded 10% while for the future the national target is to produce 5,000 graduates per year by 2030 (Cloete et al., 2015; Mouton et al., 2019). However, because of the COVID pandemic, national doctoral graduations are expected to fall for 2020/2021. So, for example, in my own university of Stellenbosch's situation, the decline was from 362 doctorates in 2019 to 302 in 2020 (Administrator from Centre for Business Intelligence, personal communication, 10 June 2021).

The national context

The national doctoral context consists of two components, the qualifications framework and the assurance of doctoral standards by the Council on Higher Education (CHE).

The South African National Qualifications Framework

The South African National Qualifications Framework (NQF) (Department of Education, 2007) provides a single higher education qualifications framework with universities being independent degree-granting bodies which set their own standards within NQF requirements. The Higher Education Qualifications Sub-framework (HEQSF) (Department of Education, 2013), established common parameters and criteria for the design of university qualifications, aimed at facilitating comparability of qualifications across universities. However, universities could design or redesign their own doctorates, reflecting their different visions, missions, and plans.

The doctorate in South Africa takes one of two forms, the PhD and the professional doctorate. The PhD aims at providing for academic and research careers and can be completed via a monograph or as a set of publications or, in certain fields, creative work such as artefacts, compositions, public performances, and public exhibitions in partial fulfilment of the research requirements. The professional doctorate provides for a research career in the professions and/or industry and is designed around the development of advanced performance and innovation in a professional context. It requires a combination of coursework and research, leading to a research component (comprising at least 60% of the degree) as an original thesis¹ or another form of research that is commensurate with the nature of the discipline or field.

Over time, distinctions between these two doctoral qualifications and their requirements have become blurred (Herman, 2011) and many universities have treated them as the same, mainly due to historical and perceptual factors.

The Council on Higher Education

In terms of national legislation, the CHE, with its sub-structure, the South African Quality Authority (SAQA), is the quality assurance body for all South African

higher education qualifications. As for the doctorate, the CHE initiated a review process for doctoral programmes across universities in 2018. Consequently, a standards document was distributed as a guideline and tool towards self- and peer evaluation of universities' doctoral programmes (CHE, 2018).

Quality indicators for doctoral programmes include at least the following pointers (CHE, 2018, adapted from Cloete et al., 2015):

- the quality of candidates at entry level;
- the quality of the doctoral programme;
- the quality of supervision;
- the quality of doctoral graduates at exit level, which includes employability;
- the quality of the thesis;
- the quality of outputs from the doctorate, which involves a specified number of publications submitted to or accepted by accredited² journals and might vary amongst disciplines, as well as citation rates.

Turning to doctoral graduate attributes and their assessment, the CHE review guideline states that a doctorate may be awarded when the qualification standard has been met or exceeded. The purpose and level of the qualification will have been achieved when several attributes, related to knowledge and skills at doctoral level, are evident. These attributes are assessed within the context of the stated purpose of the specific doctoral qualification (CHE, 2018, p. 13). Stated attributes include being able to communicate with scientific and non-scientific audiences, contributing to solving material problems within developing contexts, effecting change for the better through research, effectively manage a research project, and operating relatively independently by taking responsibility his/her for own work.

The CHE review guideline also provides several pertinent sets of criteria for universities to generate evidence-based information for their self-evaluation protocols and reports. These sets include areas such as (a) institutional conditions for offering doctoral programmes; (b) policies and mechanisms for doctoral progress and review; (c) policies and mechanisms for submitting research work; (d) policies and procedures for final assessment; (e) policies and mechanisms for course-work; and (f) policies and procedures for work-integrated learning (CHE, 2018).

The criteria related to final doctoral assessments [see (d)] imply that doctoral assessment procedures at any university should be evidenced by characteristics such as the following (CHE, 2018):

- the selection of examiners should guarantee expertise in relation to the study topic. Examiners should be independent, fair, reliable, and demonstrate academic rigor;
- examiners' reports, the criteria they apply and responsibilities for deciding to award the degree should be coordinated and agreed upon, while evidence of quality assurance and consistency of standards applied across the institution should be clear;

- procedures of oral evaluation/examinations, if and where used, should be in place and clear;
- where used, inter-institutional agreements for the award of joint, dual, and co-badged degrees should be in place;
- appropriate measures for ensuring the security, validity, and reliability of doctoral certification should be evident;
- procedures for appealing against examination decisions should be clear.

The general report culminating from the CHE review process was not available at the time of writing this chapter. I shall thus merely provide a few personal impressions as a participant in the review process at one university.

What emerged from the doctoral programme review process were:

- institutional information on doctoral programmes as required was not always readily available and such availability varied amongst institutional units (for instance, at one institution, and mainly due to staff rotation and a lack of institutional memory, examination office officials could not provide accurate records of examiner reports);
- since universities are relatively autonomous regarding doctoral procedures, only a few universities use oral examinations at the doctoral level (the issue is discussed later in this chapter) and most rely on written reports and examiner recommendations;
- proper attention to graduates being assessed for attaining (doctoral) attributes was not prominent across institutions and faculties as, in some cases, more emphasis was placed on certain attributes than others (for instance, communication with scholarly peers received more attention at instances where oral examinations were the norm);
- while doctoral enrolments are increasing, there is no equal increase in the number of qualified and trained study supervisors in some disciplines (for instance, not all doctoral graduates are able or available to supervise due to heavy teaching loads and undergraduate teaching responsibilities, which seems a typical challenge within developing higher education contexts).

It will be interesting to learn what may emerge from the national doctoral review report and how universities will respond to address potentially identified weak spots.

Doctoral processes and procedures

There is a very limited literature on doctoral examination in South Africa, so much so that there is only one article (Schulze & Lemmer, 2019), which has compared the administration of doctoral examinations between universities. The sample included six universities, representing research-oriented, comprehensive, technology, and open and distance education institutions.

Five of the six universities followed the same procedures, with minor variations, in the appointment of examiners and the constitution of examination panels. The thesis by monograph or by publication is the main route towards a doctorate, exceptions being doctorates in arts and design where artefacts or compositions qualify as evidence of doctoral accomplishment. Requirements for the doctorate by publication can vary amongst disciplines, with different requirements for publication-ready, and/or submitted, and/or published articles. Peer standards within disciplines or field of study usually serve as the reigning norm.

Programme duration varies between two years for full-time studies to four or five years for part-time studies and candidates need approval from study supervisors before submitting for examination. In cases where students want to submit without supervisor approval (which is very rare), special measures apply. Such measures can include an accompanying letter to examiners explaining the particular situation or initiating a consultative process to mediate between student and supervisor(s).

Schulze and Lemmer (2019) elaborate on issues such as the role of supervisors in the examination process, criteria for examinations, the nomination and appointment of examiners, constituting examination panels, and the 'frequent use' of examiners. What follows summarises certain findings from this relevant study, informed by my own experience as a doctoral supervisor and examiner.

Nomination and appointment of doctoral examiners

At all six sampled universities, supervisors nominate a set number of examiners (usually five) who are external to the university, have doctorates themselves and are of reputable standing in the field or discipline. In some cases, internal examiners are nominated to draw on their research expertise, or to expose early career researchers to doctoral examination. Based on supervisor judgement, mature students can also suggest names for nomination. Student 'maturity' does not necessarily refer to chronological age but can be those candidates who are in early career academic positions or with vast experience in a profession or industry. The list of nominees is then submitted to the Head of Department for recommendation to the relevant faculty's examination committee (or higher degrees committee) for scrutiny and final approval. Nominations may be referred back for reconsideration where applicable.

Examiners are contacted prior to nomination by supervisors to check on their willingness and availability. An abbreviated curriculum vitae, indicating publications relevant to the study and examination experience in the field, as well as a motivation for the nomination, accompanies all nominations. Study supervisors do not examine, but where oral examinations apply, a supervisor may attend the viva and supply additional information on the relevant study if and when required.

Across the sample of six universities (Schulze & Lemmer, 2019) exclusions to eligibility to examine are as follows: (1) a nominated examiner should not have

been a collaborator in the candidate's work and any other involvement should be disclosed; (2) an external examiner is a person who has not graduated from the same institution within a period of time (usually seven years); and (3) the identity of examiners is not disclosed to candidates until after the examination has transpired.

Typical further requirements for external examiner appointments are national and/or international scholarly reputation in terms of publication output and impact (H-index); recency of publication output relevant to a particular study; being from a reputable university or research institution; previous doctoral examination experience (the level of experience may differ amongst fields and disciplines, depending on whether the research is in a new or established field of inquiry); knowledge regarding the research topic and/or methodology employed; and availability for examining, including participating in the doctoral viva.

The number of doctoral examiners appointed per candidate varies per institution and ranges between two and three. One institution requires all examiners to be foreign, while the other five require at least one to be from outside the country. However, exceptions may apply if there is a local expert in the field. It is only after all examination results have been officially finalised and accounted for that the names of examiners are disclosed to candidates, subject to written examiner permission.

Finally, the integrity and appointment of examiners were emphasised by all six participating universities. Problems experienced in doctoral examination processes usually arose from nomination and appointment procedures, highlighting the responsibility of supervisors to familiarise themselves with examination policies and processes, including the responsibility to convey details of the relevant examination steps to doctoral candidates.

Conducting final doctoral examinations

Examination decision categories

Universities have their own procedures for examining doctoral theses/dissertations. At least two requirements are ubiquitous, namely (a) indicating a result and (b) submitting a narrative report.

Recommendations on results largely correspond with international practice namely that the thesis is (i) accepted as submitted, thus no changes are needed; (ii) accepted after minor corrections are made to the satisfaction of either the supervisor(s) or the examining panel; (iii) accepted after major corrections are made (usually linked to content and/or structure) to the satisfaction of either the supervisor(s) or the examination panel; (iv) to be revised in its entirety and resubmitted for re-examination by all examiners on one further occasion; or (v) failing without an opportunity for revision and re-examination.

Categories (i) and (v) very rarely apply, and it is normally the other recommendations that are made. If category (iii) or (iv) is decided upon, a realistic timeline

is allowed for completion and checking or re-examination. No marks are allocated at the doctoral level, and no distinctions (e.g., cum laude) are awarded.

In institutions where there are no oral examinations, an independent, non-examining chair, appointed by the university department, scrutinises all examiners' reports, checking for indications of consensus. Where vast discrepancies occur, a faculty's examination or higher degrees committee may override a minority report, or the non-examining chair may negotiate a solution with a 'dissenting' examiner. In cases of examiner deadlock (even following an oral examination), an arbiter is appointed whose recommendation is final. Supervisors and doctoral candidates often highlight different degrees of discomfort with discrepant reports and emphasise the importance of a judicious and proactive appointment of suitably qualified examiners (Schulze & Lemmer, 2019).

If a candidate and/or supervisor experiences an examination as being conducted unfairly, appeal procedures apply. This may refer to non-viva as well as viva type examinations, upon which specified procedures then follow.

Doctoral examination reports

In terms of the nature of narrative doctoral examination reports, some universities indicate concerns relating to the quality of reports and variation in their length, scope, and rigour (Schulze & Lemmer, 2019, p. 191). Some institutions 'blacklist' examiners who produce inadequate examination reports, while in other instances general and vague reports are judged as highly problematic. When examiners submit their reports late or request unreasonable postponement, it is experienced as putting candidates at a deficit.

Doctoral examination reports usually indicate areas for improvement in doctoral studies. A national study (Du Preez & Simmonds, 2018) of 92 doctoral examination reports across 19 universities in one field of the study pointed to at least four weaker areas in pointed out in doctoral work:

- *Research design* – Shortcomings in the accuracy, scope, and clarity of data analysis and the presentation of results, sample sizes being either too small or too large, and a lack of clarity on sampling procedures;
- *Literature* – Literature inadequately analysed, synthesised, and critiqued with an over-emphasis on certain eras or sources;
- *Contribution claimed* – Studies not always conducted within the indicated scope and remaining at the level of description and a lack of proper conceptualisation;
- *Technical aspects* – Incorrect language use, grammatical errors, and inconsistent or insufficient referencing.

Although findings from the Du Preez and Simmonds study can obviously not be generalised across universities or disciplines, the sample was sufficiently large to

draw some inferences. Such critique may also link to discrepancies in other fields or disciplines not explored in their article.

Oral examinations/vivas

The study by Schulze and Lemmer (2019) show that at least four universities in their sample of six required a viva or colloquium (both ‘closed’ events) at the time. Two institutions did not require an oral examination, which is currently true for most other universities.

The nature and status of the oral examination is not standardised across those universities that administer the viva, indicating variability across four universities. In some instances, the viva takes the form of a full-blown oral examination with clear guidelines, while in others the format is largely that of an academic conversation or a celebratory and ceremonial event.

Oral examinations are usually attended by an independent, non-examining chair who presides over the meeting, the candidate, the examiners, and the supervisor(s). Supervisors attend as non-examining observers and may provide information on request. Supervisor attendance also helps students to effect recommended changes to their studies following the oral examination.

At most South African universities that employ doctoral oral examinations the purpose of vivas is threefold, namely:

- authenticating doctoral work by providing an opportunity to inquire deeper into aspects of a study/thesis beyond a written text, including whether a candidate is in full control of all relevant elements of a study;
- providing an opportunity for candidates to engage with others in the field at a scholarly level and facilitate future relations with the scholarly community;
- arriving at a measure of examiner consensus about the final result of a study, explicating the necessary changes, where applicable.

While all universities furnish examiners with written guidelines and criteria for examinations, institutional policy documents rarely provide clear guidelines on conducting doctoral vivas (Schulze & Lemmer, 2019). Such information is usually provided to non-examining chairpersons and shared with examiners prior to the viva. What remains a moot point is whether a candidate could be referred for major corrections or a re-examination solely based on an inadequate oral defence.

What sometimes poses a problem regarding doctoral vivas is that some doctoral candidates are English Second Language speakers and may find verbal expression in English at an oral examination more challenging than first language speakers. However, the HESQF (Department of Education, 2013) level 10 (doctoral) descriptors require a doctoral candidate to publicly defend his/her study and disseminate the study’s results to both learned and lay audiences (in English).

Although there are moves towards allowing students to conduct and defend their research in other (mainly African) languages at some universities, finding

suitable external examiners remains a challenge. The reigning argument is that English continues to be the international language of publication and scholarly debate and thus doctoral students thus have to achieve an acceptable level of competency and fluency.

In terms of examination measures related to the COVID pandemic, all doctoral oral examinations have been conducted online since 2020. To make this possible, new guidelines and procedures were established by those universities that require doctoral vivas as part of the examination process.

Examples of good doctoral examination practices

While it is impossible to generalise across universities, the following four laudable examination or examination-related practices can be mentioned from own observations:

- first, quality research output (which includes doctoral examinations) and post-doctoral/research careers are increasingly promoted by universities. This includes a drive towards making doctoral research more relevant to the problems of a developing country such as South Africa;
- second, the drive towards promoting a community of scholars and peers during and following the doctoral examination phase prevails. Many supervisors are utilising the benefits of doctoral examinations, including contacts with international examiners and experts, towards this end;
- third, opportunities for doctoral study supervisors to be trained as examiners are on the increase. Such training, which can be in-house or external, includes guidelines on how to handle oral examinations and the writing of proper narrative examination reports;
- finally, and in view of an increase in doctoral candidates and graduates, co-supervision is promoted with inexperienced supervisors, not only strengthening their capacity to supervise but also to examine. The latter includes courses and activities for study supervisors that encourage pre-examination quality audits.

Ongoing debates around doctoral examinations

The national review of doctoral programmes will inevitably point to some issues and future debates, including those around doctoral examinations. As these results are pending, my own observations at several universities include the following three potential areas for debate in the shorter term:

- before wider digital access, oral examinations at the doctoral level were limited to on-site events which implied costs and other resources. Consequently, many universities did not consider oral examinations and relied solely on written examination reports. With online oral examinations becoming

easier and cheaper to conduct, and with the increasing need for authentication of studies, the debate on whether all universities should not require oral examinations will probably deepen. Such a requirement will imply some training and quality assurance measures, which will form part of the debate (also see Bitzer et al., 2018);

- many supervisors point to plagiarism in theses as a major quality issue. The reigning debate includes how research ethics can be strengthened on the one hand and how more advanced detection technology is to be utilised on the other. This debate is enhanced by pressures to complete doctoral studies in time and to publish from them. It will be of much interest to see how universities take this issue forward, especially in its relation to examining;
- linked to the pressures on both doctoral candidates and their supervisors to speed up completions and to publish, is the ongoing debate on qualification and thesis formats. One format which currently attracts most attention is the Doctorate by Publication, which is picking up in popularity at many universities. While the thesis via publication has been used for a considerable time in the natural and related sciences, the social sciences and humanities are increasingly exploring this option. Since supervisors and examiners are relatively inexperienced in utilising this format, the debate extends to whether most or all doctoral students can complete such studies successfully.

Conclusion

Overall, doctoral examinations are taken seriously by South African universities. Most institutions have examination procedures that enhance the quality and integrity of examinations. However, there is much room for improvement at some universities. One aspect lacking is the training of doctoral supervisors which extends beyond the conventional supervision of studies and needs exposure to all requirements of the examination process – including quality assurance of theses prior to examining, the handling of oral examination procedures and examining for other institutions.

In addition, doctoral examinations are often handled as secretive events that students know little of, and in many cases, they are not informed on what will transpire. This is seen by some as subduing the scholarly aims of peer assessment and may deprive doctoral students of opportunities to fully demonstrate doctoral attributes.

Notes

- 1 Universities in South Africa use both the terms ‘thesis’ and ‘dissertation’ for the doctorate as monograph.
- 2 ‘Accredited’ journals are those approved by the Department of Higher Education and Training as reputable and appearing in internationally recognised indices. Articles in non-accredited journals do not qualify for DHET subsidy as a university funding mechanism.

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SPAIN

Montserrat Castelló

Introduction

Doctoral degrees have been awarded in Spain since the mid-19th century, but they were not research based and it was only at the beginning of the 20th century that such doctoral programmes began to flourish in Spain, and that doctoral theses became scientific works based on original research (Miguel Alonso, 2003). Subsequently, doctoral education grew slowly in Spain until access to the European Union in 1986 and the subsequent adaptation of the European Higher Education Area framework drove a rapid expansion and development of doctoral programmes.

In the 2018–2019 academic years, 90% of Spanish universities had doctoral provision and a total of 1,156 doctoral programmes were offered by the 50 public universities and 33 private ones. In all, 89,353 candidates were enrolled in doctoral programmes, and there were 9,340 doctoral graduates (Ministerio de Universidades, 2021).

In what follows, I describe the general assessment policies and practices for Spanish doctoral degrees, which can only be awarded by universities. Information was collected by combining the bases established by the National General Regulation (Boletín Oficial del Estado [BOE], 2011; 2016) and a web search regarding the universities' application of the Regulation.

The national framework for doctoral examination

Programmes leading to obtaining the official title of Doctor must be verified and accredited by the Council of Universities and authorised by the corresponding Autonomous Communities within Spain, following the provisions of Royal Decrees 1393/2007 and 99/2011 which established the official organisation of university education in general and doctoral education in particular. Therefore,

before being launched, all the Spanish doctoral programmes must undergo an initial national evaluation that certifies their quality and this has to be repeated every six years to maintain accreditation. This evaluation process is carried out by national and regional quality agencies which appoint a committee of experienced researchers to evaluate each particular programme. These committees analyse the doctoral programme processes and outputs based on public information, internal documents and relevant stakeholders' perspective and provide a final report indicating the strengths, weaknesses and aspects to improve upon in the next six years.

Criteria for the assessment focus on the quality of the doctorate and the correct development of doctoral training, the existence of funded and experienced research teams, and doctoral programme outputs, both in terms of theses defended and publications, projects, and other related scientific contributions. Additionally, the degree of internationalisation of the doctorates is also assessed, with particular attention paid to the existence of international networks, the participation of international professors and students in programmes, the mobility of professors and students, and the numbers of international citations, joint publications with foreign researchers, organisation of international seminars, or any other relevant criteria.

The structure of doctoral assessment

While the National General Regulation is the standard framework, which has to be observed by all the doctoral programmes, for each of the latter there is a Programme Academic Committee (PAC), which is responsible for managing the different stages of assessment appropriately and fairly, and whose work, in turn, is overseen by the university's Doctoral Schools. Within the standard framework, universities and doctoral schools have some autonomy to adjust particular aspects and procedures of doctoral assessment, usually relating to specific disciplinary and scientific cultures and consolidated practices.

The National General Regulation establishes different procedures for formative and final summative assessment. Formative assessment focuses on the student's progress and is carried out during the doctoral journey, mainly through the student's annual Activity Report. These yearly reports set out all the training and formative activities students engage in during the academic year, including the supervisory meetings and research outputs such as publications and workshops, conference, or seminars contributions. Two significant steps in the summative assessment are the approval of the research project (RP) and then presentation of the thesis and oral defence. The following sections detail each of these doctoral assessment milestones.

The first-year research project

As mentioned earlier, the first crucial step to ensure candidates permanence in the doctorate is the approval of the RP usually after the first year of the doctorate and no later than a year and a half after starting. The RP is a written document

containing a first outline of the student's research and the thesis plan. Therefore, it refers to the general objectives for the whole doctorate, the theoretical and thematic relevance of the RP, the details and characteristics of the study or studies to be undertaken, how they will be approached, and the expected results. It should also contain a timeline of when the activities will be carried out to achieve the proposed objectives within three or four years.

The ultimate goal of the RP is to provide the student and the thesis supervisor with a validated map to guide them through the process. However, considering any original research endeavour is subject to uncertainty and unforeseen constraints, changes, or adaptations of the RP are allowed and, for this reason, specifying a contingency and risks plan is strongly recommended.

A committee including two or three (in some cases up to five) independent referees assess the RP. Depending on the programme and the university, these independent referees can be internal or external and base their evaluation on the written document exclusively or in some cases its oral defence as well. If the committee does not approve the RP, the candidate has a maximum of six months to make changes and revise the proposal. If the resubmitted RP is rejected, the student is withdrawn from the doctoral programme.

Assessing annual progress

The PAC annually assesses the candidates' progress through the Activity Report that students are required to submit at the end of every academic year. This report includes all the disciplinary or cross-disciplinary training received and details of other activities that have impacted their development as researchers. The report should also refer to changes in the research plan or thesis supervisor(s), temporary absences or research suspensions, grants or awards received, scientific publications and conferences, and workshops or seminar contributions. Therefore, it is a register recording the candidates' development as researchers and tracking their particular trajectories during their doctoral journeys. The Activity Report has to be accepted and validated by the candidate's supervisor(s).

The thesis supervisor(s) also has/have to submit a report that assesses the student's progress in terms of learning, research outcomes, and the accomplishment of the thesis objectives.

Based on the student's and the supervisor(s) reports, the PAC individually assesses each candidate's progress and makes a positive or negative evaluation. There are no specific rubrics or criteria to inform this evaluation other than the supervisor's satisfaction with the progress of the student and the consistency between the achieved outcomes and the overall research plan approved. Candidates are permitted to remain within the programme even if there are a limited number of negative annual evaluations (usually one or two in exceptional cases), but an overall positive annual evaluation is required for candidates to defend their theses.

Within this general framework, annual progress assessment practices vary greatly between programmes and universities. While in some doctoral programmes, the whole procedure is carried out by the PAC, others set up specific

progress assessment committees for each student. Membership of these committees (usually referred to as Follow-Up Committees) may vary annually or remain stable for each candidate through the whole programme, thus following each trajectory development longitudinally. The Follow-Up Committees make their recommendations after discussing the outcomes and processes over the year with the candidate, which is a valuable opportunity for a formative assessment. However, this does not always happen because arranging annual oral discussion sessions is considered logistically tricky and administratively complicated. It may be noted that, during the COVID-19 pandemic, all of these progress sessions have been held virtually, a more sustainable alternative to face-to-face that will likely remain in many cases.

The thesis defence

Besides annual assessment, there is no further summative assessment until the thesis defence, which, according to the Spanish national regulation, consists of three phases: the thesis submission, approval, and oral defence.

Thesis submission

According to the Spanish General Regulation (article 13), the PhD thesis should be submitted within no fewer than two years and no more than four years of full-time study from the start of candidature. Exceptionally, a complementary year can be permitted (i.e., due to health leave), which is also usual for part-time study candidates. Candidates are responsible for their thesis submission, which must be formally authorised by the supervisor(s).

According to the regulation, the thesis should illustrate the candidate's competencies to develop independent research and innovation. This research work can be submitted as a monograph – a unified text describing a research topic – or as a series of articles. The number of articles required for an article-based thesis varies according to individual doctoral programmes and different university regulations, but is generally a minimum of between two or three papers. The requirements regarding the type of publications and journals also differ across disciplines and universities. Usually, articles must be published or, in some cases, at least accepted by high-quality indexed scientific journals in the relevant disciplinary field. However, in recent years, there has been the growth of a hybrid format in some disciplines consisting of a monograph, which includes several studies – usually between two and four – papers structured in the form of scientific articles, and thus, easily publishable either during or after the defence. Frequently, some of – if not all – the papers included in this thesis format have already been submitted to scientific journals. This hybrid option has the advantage of enabling candidates to submit the thesis independently of the number of articles they have actually published.

Where multiple authors are involved, thesis submission as a series of articles must include an agreement form where co-authors accept that a specific article is

part of the candidate's thesis and disclaim any right to use that article for another purpose (including their own doctoral theses if co-authors are not PhD holders). Whereas such agreement may be unnecessary for disciplines in the humanities where single-authored papers are more typical, it is crucial for fields where articles usually include many co-authors having quite different roles and responsibilities in the final output as in the health sciences or STEM subjects. Consequently, when article-based theses have several co-authors, doctoral programmes can ask candidates to identify and authenticate their contribution.

Though some Doctoral Schools and programmes have introduced screening for plagiarism in the past few years, this is not a common practice, and the majority rely on candidates, supervisors, and especially the Follow-Up Committees and the annual assessment process to guarantee originality and authorship. Whereas traditionally theses had to be submitted on paper, after the COVID-19, all universities allow digital submission.

Thesis approval

Once submitted, the PAC must approve the thesis manuscript. At this point, it needs to identify external referees to evaluate quality of the thesis quality and whether it should go forward for a public defence. All external referees must have doctorates and be experts in the thesis subject. They are also expected to be active researchers with a high-quality international record of scientific publications. Referees can be either the ones in the annual follow-up supervisory committee members or new members.

Specifically, external referees are asked to report on the structure and organisation of the thesis, contribution to knowledge and understanding, and the strengths and weaknesses of the research. They also have to consider its overall quality and, if it is not viewed as satisfactory, identify areas of concern, issues, and changes that require revision.

When the reports of the external referees indicate concerns regarding the thesis quality, the PAC informs the candidate and the supervisor(s) about those matters and asks for them to be addressed in a resubmission. Once the thesis is resubmitted, the same referees (or the PAC in the case of minor changes) assess whether the revised document is now satisfactory. Though it does not happen very often, that process can involve several rounds until the thesis is approved, in which case the oral defence is authorised. The whole process usually takes around three months, but this varies depending on the doctoral programme procedures and the number of evaluation rounds that the thesis may require.

The oral defence

The first step in the oral defence is for the PAC to nominate an Oral Defence Committee's which it does after consultation with the supervisor(s). All members of the Oral Defence Committee must be PhD holders and have accredited

research experience. However, how this research experience is accredited varies between universities and disciplines. Most of the programmes require a detailed record of thematically related scientific publications and RPs or, when appropriate, an official accreditation provided by national and regional university quality agencies. The latter carry out assessment processes and certify that applicants meet a minimum threshold of quality and scientific experience as a preliminary step to entering competitions for positions at Spanish universities (tenure-eligible, associate professor, and full professor).

Policy on the number of members of the Oral Defence Committee also varies between universities. Until 2010, the general national regulation required that there should be five members of the Defence Committee for all doctoral programmes. But with the convergence of the Spanish doctorate policies and structures to the European Higher Education Area (BOE, Real Decreto 99/2011), the universities and doctoral schools can now decide the number of members of the Oral Defence Committee. Since then, more than half of Spanish universities have changed the requirement to three members, while the rest still require five.

It is a requirement that most of the Defence Committee members are external to the university and the collaborating institutions in the Doctoral School or programme. Neither the supervisor nor the tutor can be members of the Defence Committee. Many programmes ask the pre-defence referees to be part of the Oral Defence Committee, provided they fulfil the requirements. One has the role of president, who leads the session, and another that of secretary who is responsible for administrative matters. While there is no explicit rule set for the distribution of the roles, usually, the president is the more expert or senior researcher, while the secretary is the youngest, preferably internal to the university and familiar with the administrative procedures.

If the thesis is designated as an international doctorate, at least two committee members should come from non-Spanish universities. In such cases, the thesis language should be English, and the oral session should also be in English, at least partially. If the thesis is not designated as an international doctorate, proceedings may be conducted in any official Spanish language. While the use of English language in theses has been increasing in specific domains such as STEM or economy in the last ten years, it may be noted that Spanish was still the language of two-thirds of the theses defended in 2019 (Ministerio de Universidades, 2019).

The nominated and approved Oral Defence Committee receives the thesis and the final Activity Report of the candidate to enable them to assess both the final document and the training processes and competencies acquired during the doctoral journey. The report is not assessed directly but constitutes a qualitative evaluation instrument that complements the doctoral thesis's evaluation.

The oral defence session usually involves three stages. First, the candidate presents their research work, emphasising its contributions and how it has impacted the field and his/her own development as a researcher. Then, the president of the Defence Committee can invite any doctor present at the public session to contribute. This invitation is specially addressed to the supervisor(s), who usually

take to the floor to highlight – and defend – the candidate’s trajectory or any specific aspect of the process and the work done. Finally, the members of the Defence Committee discuss the thesis and raise questions to enable them to understand the research work better and assess how well the candidate is able to defend it.

The public session ends when the members of the Defence Committee consider that the candidate has answered and discussed all the issues raised. At this point, the candidate, the supervisor(s), and the public are invited to leave the room for the Defence Committee to deliberate. The committee has to produce a final report assessing the thesis and the oral defence and must reach agreement regarding the grade awarded according to the following scale: Not suitable, approved, notable, and outstanding. There are no general guidelines provided for grade requirements, and criteria are largely implicit and vary within and across disciplines and universities.

Once the Defence Committee is agreed on the verdict, the candidate, supervisor(s), and public are then recalled to hear the notification of the grade.

It may be noted that, if the grade awarded is outstanding, the Committee may grant the award of a doctorate *cum laude* provided that all members vote in favour in a secret ballot. The scrutiny of the secret votes is carried out in a different session from the one corresponding to the defence of the doctoral thesis, and award is notified later to the candidate through the university administrative procedures.

The latest statistics indicate that 85% of the theses defended in Spain in 2019 obtained the maximum grade of ‘outstanding’ and the doctorates were awarded ‘*cum laude*’.

Despite differences between disciplines and research cultures, oral defences in Spanish doctoral programmes usually constitute a pleasant academic experience for candidates, mainly due to some of the regulation assessment procedures such as the need to have the thesis approved previous to the oral defence session, the public nature of this oral session and the acknowledgement of the supervisor(s)’ suggestions regarding the Defence Committee appointment. The interventions of the Oral Defence Committee members tend to follow the rhetorical discursive practice of a *laudatio* followed by a more or less gentle *disputatio*, and they rarely dismiss or argue with the candidates. The considerable percentage of thesis awarded with the highest grade shows that oral defences are interpreted like a ritualistic celebration, especially for friends and families, even though supervisor(s) and academics usually elaborate more realistic and sophisticated interpretations of the Committee’s impressions regarding the thesis and the candidate’s answers.

During COVID-19, most universities and doctoral schools developed specific guidelines and protocols to turn the traditionally face-to-face oral defences into virtual sessions and, though some candidates and supervisor(s) initially decided to postpone it, the majority of those that were ready to defend in the last semester of 2019 or during 2020 accepted the challenge to organise such virtual public sessions.

Summary

The key features of the Spanish system may be summarised as follows:

- all Spanish universities must structure, design, and develop their doctoral programmes according to the framework of the General Regulation for the doctorates issued by the National Government (BOE, 2011);
- supervisors cannot take part in the final assessment of their students; thus, they cannot be part of the Follow-Up Committees or the Oral Defence Committee;
- theses should be approved by the supervisor(s) and the Academic Committee of the PhD programme before they are authorised for the oral Defence session;
- all the Oral Defence Committee members must be doctors with accredited research experience;
- at least one of the Oral Defence Committee must be external to the institution. In the case of the international doctorates, another member of the Committee must be an international researcher;
- the final grade is decided during the oral defence session, which is understood as an opportunity for candidates to demonstrate to what extent they have mastered the subject and methods they used in their research and have acquired the competencies to develop a researcher career;
- despite differences among disciplines and research cultures, oral defences in Spanish doctoral programmes usually constitute a pleasant academic experience for candidates.

Conclusions

The general national regulation establishes a highly structured and consistent framework for the Spanish doctoral programmes and core assessment procedures. Consequently, variation exists only within this framework and refers mainly to specific strategies and practices that do not substantially modify the type and nature of the assessment. At the same time, the need for the doctoral programmes quality assessment every six years has increased doctoral schools interest in revising their internal procedures and establishing training and guidelines, especially when it comes to formative and summative evaluation of candidates.

The inclusion of formative evaluation procedures during the doctoral journey in the current general national regulation in 2011 has impacted the doctoral programmes practices and conceptions driving change and innovation when applied consistently and reflectively. Although such procedures also increased the administrative burden, their contribution to moving the focus from the final output – usually the thesis oral defence – to competencies relating to learning and development in the doctoral assessment cannot be dismissed. This shift indeed varies between doctoral programmes, and in many cases, the relevance of

formative evaluation is still merely anecdotal rather than substantive. However, it is also true that when training is provided, the changes made are in the direction of a more diverse, sustainable, and adjusted combination of formative and summative assessment of doctoral trajectories and competencies instead of an exclusively thesis-based final assessment.

Yet, in the last stage of assessment, the oral thesis defence procedures and practices remain without significant changes from the previous century except for the number of members of the Oral Defence Committee. This lack of variation also affects the chance to diversify the thesis format and, as the literature suggests (Paré, 2019), constrains the ability to bridge the gap between academic and societal research.

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SWEDEN

Henrik Viberg

Introduction

Sweden has 34 higher education institutions with the authority to award doctoral degrees and in 2020, there were just over 17,000 active doctoral students. In that year, the number of students admitted to doctoral/postgraduate education was 3,100, evenly divided between men (51%) and women (49%). Again, in 2020, according to the Swedish Higher Education Authority (2021), 2,570 doctorate degrees were awarded and the average time from starting the degree to award was 50 months. This has to be seen in the light of the fact that in Sweden, doctoral funding is limited by law to a maximum of 48 months, i.e., most candidates finished nearly on time (Swedish Higher Education Authority, 2021).

This chapter will outline the national framework for doctoral education and the structure of doctoral examination including the assessment of course work, the quality control of doctoral studies, the appointment and roles of faculty opponents and examination committees, the procedures for examination, the outcomes, and debates about doctoral examination.

The national framework

Higher education in Sweden is mainly governed by two laws, the Swedish Higher Education Act (SFS, 1992, p. 1434) and the Higher Education Ordinance (SFS, 1993, p. 100). According to the Higher Education Act, (SFS, 1993, p. 100, [Chapter 1](#), section 10a), the ultimate goal is that ‘third-cycle courses and study programmes shall develop the knowledge and skills required to be able to undertake autonomous research’. In Annex 2 of the Higher Education Ordinance, ‘System of Qualifications’ it is clearly stated that the degree of doctor is awarded when the doctoral student has completed a study programme of 240 credits

(equivalent of 4 years/48 months of full-time studies) including a pass grade for a research thesis (doctoral thesis) of at least 120 credits.

While the national framework sets these boundaries, it recognises that there will be variations between doctoral research projects, and it stipulates that every student should have an individual study plan/curriculum (SFS, 1993, p. 10, [Chapter 6](#), section 27). This sets out the project-specific learning outcomes and credit requirements, including mandatory and voluntary courses. The extent of the course component relative to the research one can vary both between and within universities, i.e., there is no set proportion.

Moving on to the research component of doctoral education in Sweden, there are two main forms of doctorates (see Huisman & Naidoo, 2006; Stigmar, 2019). The first is the traditional doctorate involving a supervised research project and resulting in a monograph or book-length thesis. This is a common form of doctorate in Sweden, especially in the social sciences and humanities. The second is the doctorate by publication whereby the student produces a series of academic publications and submits these along with an overview of the main findings and contribution of the research. This type of doctorate is the prevailing form in medicine, pharmacology, and STEM (science, technology, engineering, and mathematics) disciplines, but is also starting to gain grounds in some of the social sciences, for example in economics.

By awarding a doctoral degree, the higher education institution guarantees that the general learning outcomes for a doctoral degree have been fulfilled by course work and thesis. These outcomes are set out in Annex 2 in the Higher Education Ordinance (SFS, 1993, p. 100) and are divided into three categories, knowledge and understanding; competence and skills, and judgement and approach:

Knowledge and understanding

For the Degree of Doctor the third-cycle student shall:

- demonstrate broad knowledge and systematic understanding of the research field as well as advanced and up-to-date specialised knowledge in a limited area of this field;
- demonstrate familiarity with research methodology in general and the methods of the specific field of research in particular.

Competence and skills

For the Degree of Doctor the third-cycle student shall:

- demonstrate the capacity for scholarly analysis and synthesis as well as to review and assess new and complex phenomena, issues and situations autonomously and critically;
- demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously, and creatively, and to plan and use appropriate

methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work;

- demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research;
- demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and society in general;
- demonstrate the ability to identify the need for further knowledge;
- demonstrate the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity.

Judgement and approach

For the Degree of Doctor the third-cycle student shall:

- demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics;
- demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.

Examination of course work

As noted earlier, in the Swedish third cycle education, course work has to be undertaken and evaluated. Some courses are mandatory depending on the university, the faculty and/or the specific research topic. Common examples of such courses are introductions to postgraduate studies, research ethics, and basic higher education pedagogies (Uppsala University, 2008). In addition, there are other courses that are chosen by the doctoral student and the supervisors for their relevance to the research project and approved by the faculty board.

All courses are evaluated by the specific course leader or main supervisor, according to the course syllabus, and are graded pass or fail. If a candidate fails a course, it does not necessarily mean that he or she is unable continue with their doctoral education, as they can re-take examinations. In practice, this means that sometimes a doctoral student passes the thesis examination before all of the course work is completed.

Quality control

Swedish universities have a variety of mechanisms to monitor the progress of doctoral studies and ensure that the doctoral student is ready for examination; most universities monitor progress by so-called 50% (half-time) and 80% (sometimes 90%) seminars calculated from the start of the degree programme. In these

seminars, the doctoral student gives a presentation on the progress of his or her course work and research and gains valuable feedback and advice on how to continue. These seminars are organised in different ways depending on the university, faculty and/or department, but usually involve an external reviewer to assess what has been done so far (Uppsala University, 2012a).

Further monitoring practices may include the appointments of people outside the supervisory team to review progress and advise the candidate. So, for example, at Umeå University (2018) each doctoral student is given access to a reference group. Normally, this includes at least two of the supervisors and at least one scientifically qualified university teacher with no connection to the doctoral student's research project. The reference group meets the doctoral student at a formal meeting in connection with following up on the individual study plan, i.e., at least once per year. The reference group's minutes must be summarised and commented upon in the faculties' annual reports of activities.

A further example is from the University of Gothenburg (2018) where each third-cycle student is assigned a 'within study' doctoral examiner at the start of the programme. Neither the main supervisor nor co-supervisor may serve as a 'within study' doctoral examiner. The latter must be a docent (reader/associate professor) or professor and employed by the university. He or she participates in the drawing up of the individual study plan, the monitoring of studies and also when the individual study plan is revised.

A further common way of ensuring that the student is ready for examination is the so-called pre-defence/pre-dissertation/mock defence, which takes place a few weeks prior to the actual examination/defence/dissertation. Here, the department or unit organises a preparatory mock examination in which the doctoral student prepares a presentation on their thesis and delivers it in front of the other doctoral students, post-docs, researchers, and academic staff. A few of the latter are made responsible for reading and examining each part of the thesis (summary, chapters, included articles, manuscripts, etc.) and then ask questions to mimic the actual procedure at the examination/defence/dissertation. This provides valuable feedback to the doctoral student and the supervisors to identify what needs to be done prior to the formal submission of the thesis for examination.

That said, in Sweden, the final decision to submit theses for examination and defence is made by students and they do not need the permission of supervisors, directors of studies, or heads of department.

The appointment of the faculty opponent and the examination board

The submission of the thesis triggers the doctoral examination process. The latter is determined partly by national regulations set in the Higher Education Ordinance (SFS, 1993, p. 100) and partly by local rules and regulations, of which some are common across universities while others are specific to individual faculties or departments.

At the national level, the Higher Education Ordinance (SFS, 1993, p. 100) regulates the doctoral examination and states that the thesis has to be defended orally in public. It provides for the appointment of a faculty opponent and of a grading/examination committee/board (different terminologies are employed, but for the purpose of this chapter, it is described as an ‘examination committee’).

The role of the faculty opponent is to scrutinise both the thesis and the doctoral student by asking questions and discussing the answers at the oral doctoral defence. While this is a legal requirement, there are no general national criteria for the appointment of opponents. Many universities have institution-wide criteria. So, for example, Gothenburg and Lund universities require that the opponent has to come from another faculty within the university, while Stockholm and Umeå universities require that he or she has to come from another university. Similarly, Umeå insists that opponents are at least associate professors or equivalents, while Lund university requires that they have PhDs (Lund University, 2013; Stockholm University, 2020a; 2020b; The University of Gothenburg, 2018; Umeå University, 2016; 2018; Uppsala University, 2020).

In other cases, there are no institution-wide requirements and regulations are set locally, at faculty or institution level, and therefore they differ within the university. So, for example, in the Faculty of Science and Technology at Uppsala University, it is a requirement that the opponent should ‘be a professor or have professor competence’ and that ‘teachers at Uppsala University may not be appointed as opponent’.

It may be noted that, in cases where the faculty opponent is not familiar with the Swedish higher education system and defence of the thesis, instructions are provided for the faculty opponent providing background, procedure, and expectations, so that the scrutiny of the scientific quality of the research project and thesis, as well as the knowledge of the PhD student, can be adequately reviewed at the oral examination (Uppsala University, 2012b).

The role of the examination committee is to examine and assess the doctoral thesis and the doctoral student during the defence. They have to judge this in accordance with the general learning outcomes for a doctoral degree, as set out earlier, and then grade it pass or fail. Here, the only requirement specified in the Higher Education Ordinance (SFS, 1993, p. 100) is that at least one member of the examination committee must be external to the awarding institution and otherwise the number and composition is left to individual institutions and may be supplemented by additional regulations in faculties and departments.

For present purposes, the regulations were examined in five of the leading universities in Sweden (Lund University, 2013; Stockholm University, 2020a; 2020b; The University of Gothenburg, 2018; Umeå University, 2016; 2018; Uppsala University, 2020). All of them met the legal requirement of one external member and additionally all debarred supervisors from being part of the examination committee, which was specified as having three to five members. In the regulations for both Stockholm and Umeå universities, it is explicitly stated that the members of the committee must be scientifically qualified, meaning that they

are at least associate professors or equivalent. A further variation is that, in order to enhance the development of gender equality and support diversity, the universities of Gothenburg, Umeå, and Uppsala required that the committee must represent different genders. As an illustration of additional local regulations, the Faculty for Science and Technology at Uppsala University has additional specifications about the academic qualifications of members of the examination committee and also states that ‘there may not be any conflict of interest between the doctoral student/supervisor and opponent or any examining committee member student/supervisor and opponent or any examining committee member’.

Responsibility for nominating the faculty opponent and the members of the examination board rests with the supervisory team and the head of department, but it is customary to consult with the student about the most appropriate persons within the research field. Once nominated, the faculty opponent and the membership of the examination board have to be approved by the faculty board or similar, which also appoints a chairperson for the oral examination.

The faculty opponent, the examination committee, and the public must be given access to the thesis at least three weeks before the date of the final examination/defence/dissertation, in order for them to have the time to read, scrutinise, and assess the quality of research presented in the thesis by the doctoral student.

It may be noted that, at this stage of the proceedings, the faculty opponent and/or the examination committee can advise the student not to proceed to final examination and give them feedback prior to a re-submission (Lindberg, 2003).

The conduct of the oral examination

There may be variations in the procedure depending on the discipline, but common stages are:

- i. when the respondent, faculty opponent, examination committee, and the audience have gathered at the venue, the chair welcomes everyone, introduces the involved parties, and explains the procedure of what is about to happen, so that everyone can take part in this public procedure;
- ii. next the faculty opponent, who usually is an expert in the research field, starts by describing the research field and placing the thesis within a broader disciplinary context. This normally takes between 20–30 minutes;
- iii. then, often the doctoral student gives a presentation on his/her thesis and outlines the main findings, which usually also takes between 20–30 minutes. Alternatively, the student may not get the opportunity to make a presentation and the faculty opponent covers both the broader perspective and the main findings of the thesis;
- iv. the fourth stage commences with the faculty opponent’s examination of the thesis and of the candidate. This involves questions and answers, usually covering hypotheses, theoretical background, knowledge formation,

methodological choices, interpretation of results, comparisons between different studies, the usefulness of the research, or ways to go further and develop the research. Whereas in the past, this often included detailed questions on the student's factual knowledge of the wider research area, now it tends to take the form of a more open research discussion between the faculty opponent and the respondent;

- v. when the faculty opponent is satisfied that the ground has been covered, he/she will hand over the examination to the three to five persons making up the examination committee and they will, one by one, have the opportunity to complement and complete the examination by asking further or clarifying questions;
- vi. in the final stage, the audience, which can be made up by anybody interested to be at the dissertation, is invited to ask questions.

This examination itself can take from 45 minutes up to a couple of hours, since there are no formal time limits for any of the parts making up the dissertation.

The outcomes of the examination

Once the examination is complete, the examination committee, plus the chair, reconvenes in private, where they can confer undisturbed. If the committee so wishes, the faculty opponent and the main supervisor can be invited to give their views on the thesis, the respondent, the research process, and the dissertation itself. Once it is satisfied, the examination committee has a secret ballot and accepts the majority outcome. The decision can only be pass or fail, but a written comment can be added to clarify if someone from the examination committee has opposed the decision or if there is special praise to be given or explanation/clarification in the event of failure. The latter is very rare indeed, in Sweden, and the unsuccessful doctoral student is not allowed to revise the thesis after the defence (see Stigmar, 2019).

Debates about doctoral examination

In practice, there is very little debate about doctoral examination in Sweden. Such debate as there is (see Lundström, 2019) has been about the extent to which the main supervisor and also the doctoral student may be able to influence the outcome of the examination. While the faculty opponent is formally appointed by the faculty, this is following suggestions by the main supervisor and, in some cases, also the doctoral student. These actors may also play a key part in the nomination of the examination committee. Additionally, the fact that the examination committee can invite the main supervisor and the chair can take part in discussions may also be a possible source of bias. That said, the involvement of supervisors and students is not significantly different from many other parts of the globe, and supervisors play no formal part in the decision or vote.

Summary

- Sweden has a national framework for doctoral examination which specifies the outcome of the doctorate and that it should include an element course-work and a research element culminating in a thesis monograph or a short thesis and a compilation of publications;
- Within this overall framework, institutions and in some cases, faculties as well have considerable autonomy;
- Institutions take the quality control of doctoral studies very seriously and there is a variety of mechanisms used to monitor progress and offer support to students;
- While there are opportunities for preparatory feedback, ultimately decisions to submit are made by students;
- Arrangements for examination involve the appointment of a faculty opponent and an examination committee;
- Nominations involve the supervisory team, which normally consults students;
- The faculty opponent and examination committee can advise students if their thesis is unlikely to succeed and give feedback to enable later submission;
- The oral examination has a relatively standardised form;
- Final decisions are made by the examination committee on a pass-fail basis.

Conclusions

Sweden has a long-established and widely accepted system of doctoral examination which, compared to many others, has four distinguishing features. First, a very strong focus upon quality control during doctoral studies with the aim of ensuring as far as possible that students will meet the national criteria for the doctorate. Second, and in this case in common with the other Scandinavian nations, an opponent is formally appointed to scrutinise the student's work and to question them during the viva. Third, it has an independent examination committee, which makes the final decision. Lastly, that final decision can only be 'pass-fail', i.e., there is no grading or conditional pass.

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TURKEY

Gokce Gokalp

Introduction

In the last 20 years, there has been a considerable expansion in higher education in Turkey resulting in the creation of many universities throughout the country. Currently, there are 207 universities, with 129 public universities, 74 private foundation universities, and four two-year technical higher education institutes. All but three of the public universities have at least one doctoral programme, whereas out of 74 private foundation universities 60 have at least one doctoral programme. In all, in 2021, there were a total of 5,600 doctorate programmes that were actively accepting students (Council of Higher Education [CoHE], 2021). Again in 2021, there was a total of 101,242 students enrolled in doctoral programmes (CoHE, 2021). Since 2017, with the Council of Higher Education's decision to classify some of the public universities as research universities, more emphasis has been put on graduate and particularly doctoral education. Based on their research performance (number of international publications, citations received, interdisciplinary studies, amount of funding that faculty members have received from national and international funding agencies) 11 universities have been classified as research universities.

Universities determine their own criteria for acceptance into different doctoral programmes based on the Graduate Education Regulations provided by the Council of Higher Education (CoHE, 2016). These regulations are governed by the Higher Education Law (Law number 2547) (CoHE, 1981). According to the CoHE regulations, students are accepted to doctoral programmes based on their Academic Personnel and Graduate Education Entrance Exam scores and their foreign language exam (usually English) scores (either the centralised language proficiency exam or an equivalent internationally accepted language exam like the TOEFL). While the CoHE regulations determine the general criteria

for acceptance to doctoral programmes, based on these regulations, each of the graduate schools and universities prepare their own guidelines for acceptance to different graduate programmes indicating the minimum scores candidates are required to receive and many also include other criteria like grade point average and points received from an interview with the candidate (CoHE, 2016).

To graduate from a doctoral programme, students who were accepted for doctoral studies after having gained a Master's degree with a thesis are required to complete at least seven graduate-level courses (14 for those with only a bachelor's degree), to attend a seminar course, pass the qualifying exam, pass the thesis proposal, and successfully complete and orally defend their theses. The aim of doctoral education is to help students gain the skills necessary to conduct research independently, to examine scientific problems comprehensively, and to so make unique contributions to their field. In this sense, the completion of the doctoral thesis is the main focus of doctoral programmes with the doctoral examination as the main culminating experience.

This chapter will explore the doctoral examination process in Turkey through the examination of official governmental documents, rules, and regulations as well as websites of the universities. First, a detailed description of the doctoral examination process in Turkey is provided, followed second by an account of how the final exams are conducted and the recommendations that examiners can make. Third, this chapter highlights examples of good practice in the doctoral examination process and finally, it concludes with ongoing debates surrounding doctoral examinations.

The doctoral examination process

Turkey has a highly centralised higher education system governed by the CoHE. In line with this, there is a national policy framework for the doctoral examination in the form of the Graduate Education Regulations (CoHE, 2016) which the universities adhere to, albeit with some minor variations in institutional practices. The Graduate Education Regulations of CoHE are very comprehensive and are made up of five sections. Of particular interest here is the third section, which is dedicated to doctoral education. Within this section, there are nine subsections, which include general regulations, application and acceptance, duration, advisor assignment, qualifying examination, thesis monitoring committee, thesis proposal defence, completion of the doctoral thesis, and the doctoral diploma section. For the purposes of this chapter, the focus will be on subsections that provide information relevant to the doctoral examination process.

According to the regulations of CoHE (2016), doctoral students with a master's degree are required to complete the PhD within six years (12 semesters) including the coursework component. Students accepted to the doctoral programme without a master's degree have a total of seven years (14 semesters) to complete the PhD, again including the course work component. Students

accepted to the doctoral programme have to determine their thesis advisor at the end of the first year. The department proposes the thesis advisor to the graduate school along with the thesis topic and title. The thesis advisor and topic are then approved by the graduate school's administrative board. In order for a faculty member to serve as a thesis advisor in the doctoral programme, she/he has to have served as a thesis advisor of at least one master's thesis that has been successfully completed. If the thesis topic requires that two advisors are necessary, the second advisor (a co-advisor) could be an external with a doctoral degree.

Doctoral students complete their course work in approximately two years which includes a course research methods and ethics in all of the social sciences, most of the humanities fields, and some of the engineering fields. They also have to complete a PhD seminar course, which is specific to each of the doctoral programmes. Once the course work is completed, students have to take a qualifying exam, which has both a written and a verbal component. The examination committee is made up of five faculty members, including the student's supervisor, two other faculty members internal to the institution, and two faculty members from other universities. Once the students pass the qualifying exam, their candidature starts. Within one month, a thesis monitoring committee is formed, the department recommends the membership to the graduate school and the committee is then approved by the graduate school's administrative board. The monitoring committee is made up of the thesis advisor, another member from the same department, and one member from outside the department but within the university. The first meeting with the committee takes place within six months after the student passes the qualifying exam. The student submits the written proposal to the committee members around two weeks before she/he gives an oral defence of her/his thesis proposal which includes the purpose, method, and the work plan to complete the research study they are proposing to conduct. The committee will decide whether the proposal is approved, given corrections, or declined based on a majority vote. If corrections are required, the student has one month to revise.

If the thesis proposal is declined, the doctoral candidate has the right to change the thesis topic and the thesis advisor, in that case, a new thesis monitoring committee is appointed. If the student does not change her/his advisor, then she/he has to give an oral proposal defence within three months while students who have changed their advisor and the thesis topic have to give an oral defence of the thesis proposal within six months time. If the proposal is declined again, the students are dismissed from the programme.

Once the proposal is approved by the advisory committee, the progress of the student is monitored through meetings every six months in which the student reports on the progress she/he is making on the thesis and receives feedback from the committee. The committee is supposed to meet at least twice a year, usually once each semester. A month before the committee meetings the candidate prepares a written report indicating the progress they have made so far and their

future plans for completing the thesis. The committee determines if progress is satisfactory. If progress is unsatisfactory at two consecutive committee meetings, or if found unsatisfactory three times intermittently, the candidate is dismissed from the programme. At least three thesis monitoring committee meetings have to be held before the thesis supervisor determines whether the advisee's thesis is ready for an oral defence.

During the COVID-19 pandemic, all thesis monitoring committee meetings have been held online via such programmes as Zoom or WebEx. The online thesis monitoring committee meetings are arranged by the advisor in advance. Each of the sessions is recorded and stored by the thesis advisor and all forms are signed electronically and sent to the relevant graduate school. Student-advisor meetings also take place online. All other procedures remain the same.

According to the regulations, the doctoral thesis prepared during doctoral studies has to either make an innovative contribution to science, develop a new scientific method, or apply a known method into a new field of inquiry. The doctoral candidate turns in the completed thesis to her/his thesis advisor. The advisor gives the thesis to the graduate school with her/his decision that the thesis is ready for a defence.

The advisor and the doctoral student together decide on the membership of the thesis examining committee. It is made up of five members comprising the three members of the thesis monitoring committee (including the thesis advisor) and two external members. These have to be full-time faculty members with at least tenure track assistant professorship at other universities. In addition, two alternative committee members (one internal and one external to the institution) are also identified in case the original committee members have an emergency and are unable to attend the defence. The composition of the thesis examining committee is subject to the recommendation of the department chair and approval of the graduate schools (Educational Sciences Department, 2018).

The last date the student can have the oral thesis defence is at the end of the 12th semester for those who started the programme after having completed a master's and at the end of the 14th semester for those who have not. The thesis is submitted to the graduate school for a plagiarism check, and the report is sent to the jury members. If the report has indications of genuine plagiarism, then the thesis is sent to the graduate school's administrative board for a decision to be made about whether to proceed.

The student has to have the approval of her/his advisor and then send the thesis to jury members at least ten days before the defence date (CoHE, 2016). In some universities, the thesis examining committee members are sent an evaluation form to fill out along with the thesis which they sign and return to the thesis advisor. The forms can be signed electronically; however, the signature page of the bound paper thesis requires the written signatures of all of the thesis examination committee members as well as the department chair and the dean of the graduate school.

The final examination

The final thesis examination involves the oral defence of the doctoral thesis by the doctoral candidate in order to check the authenticity of the work. It is scheduled by the thesis supervisor based on the dates and times that all jury members will be available. The defence starts with the doctoral candidate introducing her or himself, then he or she is asked to leave the room for jury members to determine the head of the examining committee. Usually this is either the faculty member in the jury with seniority or one of the external jury members. Then jury members discuss whether they find the thesis worthy of defence. They then invite the doctoral candidate back into the room and if they find the thesis worthy of defence the head of the examining committee lets the candidate know that the thesis was found worthy of defence and asks the candidate to present her/his thesis (usually a minimum of 20 minutes). In universities with English as a medium of instruction, the defence is carried out in English.

After the public presentation, there is a question and answer session. While the thesis defence is open to faculty members and graduate students as well as field experts, once the presentation and the question and answer session is completed, both the candidate and the audience are asked to leave (CoHE, 2016). Committee members then discuss the thesis among themselves and decide to either accept the thesis, to revise and resubmit after corrections, or fail it. This is determined by a majority of the votes of the jury.

If the thesis is accepted by the committee, a report indicating that the student is found successful must be submitted to the graduate school with the signature of all the committee members and the department chair within three days after the defence. The candidate has then one month to make the final edits based on the recommendations of the committee members with the guidance of his supervisor and to format the thesis according to the graduate school's formatting guidelines. The thesis is submitted to the graduate school for format control, based on the graduate school's recommendations, and any edits are completed by the student, three bound copies of the thesis are submitted to the graduate school (CoHE, 2016).

For those who receive corrections, they have to make the necessary corrections and resubmit for re-evaluation and have to give an oral defence in front of the same jury once again within six months. If the jury finds the thesis unsuccessful at this point, the student is dismissed from the programme.

Those doctoral candidates who fail the thesis defence are dismissed from the programme.

With the COVID-19 pandemic, modifications were made to the examination process. Currently, the final doctoral examination takes place online via Zoom or WebEx. The student presentation and the final decision making session with only the thesis examining committee are recorded and stored by the thesis advisor. The breakout room feature of the online meeting programmes are used to ask the doctoral students and the audience, if any, to leave. The candidate is then asked to re-join the session for the final decision.

Good practice in doctoral examinations

Students receive support from their supervisors as they prepare for the doctoral examination. The thesis monitoring committee and the meetings held with them approximately every six months provide opportunities for the student to receive guidance and to develop their presentation skills. Through the efforts of individual faculty members, some students are provided with opportunities to do a mock-defence in-front of their peers and other faculty and to receive feedback about how they can improve their presentation during the oral defence. Additionally, there are seminar courses all doctoral students must take where they are provided the opportunity to present their research ideas or other studies they have conducted to the instructor of the course and their peers.

Students and examiners also need guidance on the regulations governing doctoral examination. When the graduate school websites of the 11 public universities declared as research universities in Turkey were examined, it was discovered that all universities included the graduate education regulations of CoHE (2016) and all of the forms that are needed throughout the doctoral programme and particularly forms related to the thesis monitoring committees and to the thesis defence. Many also had written guidelines about how to prepare for the thesis proposal defence and thesis defence and what to do before and after the thesis defence.

Two examples of written handbook that illustrate good practice come from Ege University and Hacettepe University. The first one is a handbook titled 'The Handbook of Advisement in Graduate Education' that was published by the graduate school of health sciences in Ege University for students and faculty members who are serving as thesis advisors (Sahin, 2019). The handbook is comprehensive and includes a section on the thesis defence. In this section processes and procedures to follow before the thesis defence, during the thesis defence, and after the thesis defence are described in detail including how to prepare the thesis defence presentation. Second is the guide provided by Hacettepe University which is a public university in Ankara, classified as a research university. This guide has a more comprehensive section dedicated to preparing for the thesis examination and the selection of the thesis committee (Demirel et al., 2012). The section provides tips for what to pay attention to in determining thesis examination committee members and how to help the doctoral candidate reduce the stresses associated with having a thesis defence by providing them with details about the thesis defence process. The guide recommends that the advisor provides the doctoral candidate with an opportunity to practice defending the thesis. A list of possible questions committee members might ask is included in this guide as well that the advisor could share with his student in helping in prepare for the defence. There are even recommendations about what materials the student would need to bring to the defence and the proper attire for the defence. Although such guides could be considered as a good practice, only a few universities have such comprehensive guides.

There are no formalised support structures for supervisors to learn how to more effectively prepare their students for the examination. Professional development opportunities for examiners are also scarce – these usually occur through their being members of examining juries rather than having specific training sessions. It is only recently through the efforts of individual faculty members and some centres for teaching and learning excellence, that professional development opportunities have been provided in some institutions.

Recent changes surrounding doctoral examinations

In the last few years, with world university rankings gaining prominence, more emphasis has been put on high-quality publications by both faculty members and graduate students in Turkey. In fact, one of the goals identified in the 11th development plan of Turkey (Turkish Republic, Strategy and Budget Presidency, 2019) involves having more Turkish universities in the top 500 universities in the world university rankings by the year 2023. In response to these developments, several universities in Turkey have recently included in their thesis examination regulations a requirement that students have one article published or accepted for a journal to be eligible to proceed to the doctoral examination. Out of the 11 Turkish research universities, five universities have included a publication requirement along with many others including both public and private foundation universities.

In terms of where papers should be published; two of the research universities have indicated that this should be in a journal that is included in competitive indexes such as SCI, SCI-Expanded, SSCI, SSCI-Expanded, or AHCI with the doctoral candidate as the first author; three research universities do not have an index restriction and require that one journal article accepted or published in either a national or international scientific journal.

Some universities provide alternatives to the publication requirement such as a patent received, a new model that has been developed, or having presented work in a scientific conference with the publication of the study's abstract or full text in the conference's abstract book. This development that was initiated by the universities themselves seems to be leading to a change in the national framework for doctoral examinations as it is aligned with the goals identified in the 11th Development Plan of Turkey.

Summary

Key features of the doctoral examination are highlighted below:

1. all universities adhere to the definition of the doctorate identified along with Graduate Education Regulations determined by the Council of Higher Education;

2. the examination committee is made up of at least five faculty members including the thesis supervisor and is determined by the supervisor and the doctoral candidate;
3. in the examination committee there must be at least two examiners external to the institution awarding the doctorate;
4. when the candidate will submit the thesis and will have the oral exam is determined by the candidate's supervisor and the candidate based on the availability of the other committee members;
5. a thesis monitoring committee made up of three internal faculty members including the thesis supervisor meets with the doctoral candidate every six months to monitor the candidate's progress until the oral doctoral examination;
6. the oral doctoral examination is opened to the public;
7. the outcomes of the exam include acceptance of the thesis, revision and resubmission within six months or failure and is determined by a majority vote.

Conclusion

The current exploration revealed that the doctoral examination regulations are determined by the Council of Higher Education and adhered to by all the universities with only some minor changes indicating that universities have little autonomy in relation to determining their own doctoral examination processes. The regulations involve many bureaucratic procedures that have to be followed. In line with these regulations often the support documents provided to students in different universities focus more on the structural and procedural issues such as the necessary paperwork and formatting of the thesis rather than providing academic support services that will help students prepare for the doctoral examination itself.

In fact, there are no institutionalised support services provided to doctoral candidates either at the institutional or at the national level. Similarly, no professional development opportunities are provided to thesis advisors related to guiding their doctoral students throughout the doctoral examination process.

There are, however, some positive aspects related to the doctoral examination process. The establishment of a thesis monitoring committee and requiring that this committee meet at least three times following the progress of the doctoral student and providing feedback for the thesis study throughout the different stages of the thesis study is a good practice that could be adopted. A more recent development is a publication requirement before the doctoral candidate can take the doctoral examination which could also serve to increase the motivation of the graduate students; on the other hand, it could serve as an obstacle to completing the PhD because particularly in some fields of Social Sciences the publication process could be quite lengthy. Given the current situation in Turkey related to the doctoral examination process, it would seem there is room for improvement.

More studies are needed related to the doctoral examination process to develop an understanding of how both the doctoral candidates and faculty members perceive the doctoral examination process.

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UNITED KINGDOM

Stan Taylor

Introduction

The research doctorate in the form of the PhD/DPhil came late to the UK compared with many other countries; the first programme was only established in 1917 in Oxford (Simpson, 1983). Thereafter, the degree caught on very quickly, and by 1920 the award was being offered by all UK universities. A century later there were 150 institutions offering doctoral programmes, and in 2020 these produced 21,500 doctoral graduates (Higher Education Statistics Agency, 2022), making the UK one of the largest producers across the globe (Taylor, 2021).

This chapter seeks to set out the national framework for doctoral examination; look at the definition of the doctorate; outline the structure of doctoral examination; outline associated policies and procedures; consider the examination itself; summarise arrangements; and reach conclusions about doctoral examination in the UK.

In order to explore these matters, in 2021, a survey was undertaken of the public-facing documentation of all 150 doctorate-providing higher education institutions in the UK. Of these, 19 did not have awarding powers of their own and used the examination policies and procedures of others, and they were excluded. For the remaining 131 institutions, a web search was mounted for information relating to doctoral examination, including institutional rules and regulations, codes of practice, and examiners', supervisors', and candidates' handbooks. There were four institutions where no information was available giving a final figure of 127 institutions, 98% of those awarding doctorates.

The national framework for doctoral examination

From the 1920s onwards, it was left up to individual universities in the UK to define their own rules and regulations for the award of their doctoral degrees. However, in the early and mid-1960s, new higher education institutions – principally the

polytechnics – were created. Initially, they could only award external degrees validated by the Council for National Academic Awards (CNAA). The latter drew up common rules and regulations (CNAA, 1983) for awards including doctorates which were then applied consistently across these institutions.

In 1992, the polytechnics were allowed to apply to become universities. This led to a situation where, in these post-1992 universities, rules and regulations were effectively standardised on the CNAA model, while in the pre-1992 institutions, there was considerable variability (Simpson, 2009).

It was in order to address the issue of variability that in 1999 the then newly-created Quality Assurance Agency (QAA) introduced a Code of Practice (QAA, 1999) which sought to establish generic precepts governing research degree programmes, including their examination. Two years later the QAA (2001) provided a generic descriptor for the outcomes of the doctorate as part of the national Frameworks for Higher Education Qualifications (FHEQ). Subsequently, the Code of Practice has been updated (QAA, 2004, 2014, 2018), as has the FHEQ (QAA, 2014), and more recently a ‘Characteristics Statement’ for doctoral degrees was published (QAA, 2020). It is these documents that define the national framework for doctoral examination in the UK.

Definitions of the doctorate

Currently, the FHEQ (QAA, 2014, p. 30) states that:

Doctoral degrees are awarded to students who have demonstrated:

- i. the creation and interpretation of new knowledge, through original research or other advanced scholarship, of a quality to satisfy peer review, extend the forefront of the discipline, and merit publication;
- ii. a systematic acquisition and understanding of a substantial body of knowledge, which is at the forefront of an academic discipline or area of professional practice;
- iii. the general ability to conceptualise, design, and implement a project for the generation of new knowledge, applications, or understanding at the forefront of the discipline, and to adjust the project design in the light of unforeseen problems;
- iv. a detailed understanding of applicable techniques for research and advanced academic enquiry.

These criteria have been adopted virtually universally by institutions; in their definitions of the doctorate, nearly all replicated them either verbatim or with slight re-wordings, i.e., the QAA descriptor has set a common standard across the sector.

It may be noted that, recently, there has been a debate about the achievement of this standard in the context of the disruption to doctoral studies caused by the COVID-19 pandemic. Many candidates had to reorientate and/or replan their

research projects, and were concerned about whether the resulting modified outputs would meet the standard for the award. In response, the QAA (2021a) advised that:

Theses submitted during the pandemic may have smaller datasets than originally planned but, provided they meet the national standards set out in the descriptors, are as valid as PhDs awarded at any other time.

In order to inform examiners of the disruption to doctoral studies, some institutions have permitted candidates to present a ‘Covid Impact Statement’ along with their thesis (QAA, 2021b). Examiners are asked to take this into account in evaluating the work, but without compromising the standards for the award.

The structure of doctoral assessment and examination

The definition of the doctorate in the FHEQ applies to all kinds of doctoral programmes. These include variously; conventional doctorates leading to a thesis; practice-led doctorates leading to the production of a creative work accompanied by an exegesis; professional and integrated doctorates with significant taught components and leading to a thesis or portfolio; and doctorates by prior or contemporaneous publication.

The progress of candidates is assessed in various ways during their studies. For conventional and practice-led doctorates and doctorates by contemporaneous publication, there is normally a confirmation of candidature after 9–12 months of study followed by subsequent annual reviews; for doctorates with significant taught components candidates need to gain appropriate credits over the first one year (the integrated doctorate) or two years of study (the professional doctorate) before embarking upon the research phase of the degree, which is also subject to continuing reviews.

But, if depending on the doctorate there are variations in the assessment of progression during candidature, there is a common two-part structure of final examination. In the first, candidates need to submit appropriate evidence of achievement in the forms of relevant doctoral outputs, which are sent to examiners for review. In the second, candidates undergo an oral examination, the *viva voce*, following which the examiners make recommendations to the institution.

Making submissions for examination

Information about decisions to submit was available for 123 of the 127 institutions. In 50 (41%), the candidate was given the sole right to determine when to submit; in a further 13 (11%) this was subject to the supervisor certifying that the candidate had completed the programme of study at the institution and that the thesis had been checked for plagiarism; in 58 (47%) candidates were required or advised to seek the opinions of their supervisory team but had an absolute right to submit even if the latter disagreed; and in two institutions (2%), any decision

to submit against the advice of the supervisory team led to the appointment of an independent internal assessor who made the final decision. So, in principle, in 121 institutions (98%), it was possible for candidates to submit regardless of the advice of their supervisory team.

Criteria for the nomination of examiners

Once students had notified their intention to submit, the next step was to nominate examiners. All of the institutions had explicit criteria for the nomination of examiners and the normal rule was that there be two examiners, one internal to the institution and the other external. There were two main circumstances in which this rule did not apply. The first was where the candidate was a member of staff of the awarding institution, in which case there was no internal examiner but two externals to maintain impartiality. The second was where the scope of the thesis was broader than could be covered by two examiners, for example in interdisciplinary theses, and where a second external examiner with the relevant expertise was appointed.

There were seven main criteria for examiner selection.

Employment status

In all of the institutions, internal examiners had to be either currently employed or recently retired and research active. In 121 (95%) they could be any grade of academic staff, in 6 (4%) had to have passed probation, and in one (1%) they had to be a senior lecturer/reader/associate professor or full professor.

For external examiners, in 62 institutions (49%) the sole criterion was that they were employed by another institution at the time of the examination; in the remaining 65 (51%), staff who had previously worked at the awarding institution were debarred from acting as external examiners for between two and five years after leaving. In terms of grades, in 115 institutions (91%) they could be any grade of academic staff, and in the remainder they had to have senior status.

Qualifications

Academic qualifications were surprisingly not referred to in 93 institutions (73%). Of the 34 which did refer to them, four required that at least one examiner had a doctorate, 11 required both examiners to have a doctorate, and 19 required both to have a doctorate or equivalent (defined as a Master's, plus evidence of independent research, e.g., publications).

Subject knowledge

Of the 127 institutions, 33 (26%) made no mention of subject knowledge for either the internal or the external examiner; 18 (14%) had no subject knowledge

requirement for the internal examiner, but did for the external who was required to have specialist knowledge in the area of the candidate's research project. In a further 19 institutions (15%) there were requirements for the internal examiner to have a general knowledge of the topic of the candidate's research project, whereas the external was expected to have a specialist knowledge. In 58 institutions (46%) the expectation was that, between them, the examiners had both a general and, where practicable, a specific knowledge of the area.

Research-active

In total, 22 institutions of the 127 (17%) had a specific requirement that one or both of the examiners should be research active, whereas 83% did not.

Independence and conflict of interest of the supervisory team and candidate

One of the key recommendations of successive editions of the QAA Code of Practice (2004; 2014; 2018) was that supervisors should not be allowed to examine their own candidates. In all of the institutions, it was stated that staff who had any kind of substantial involvement in the candidate's research project could not be appointed as examiners.

The first three editions of the QAA Code (1999; 2004; 2014) went further, and suggested that examiners should not be appointed if they had any substantial involvement in the candidate's work or if their own work was the focus of the research project. Of the 127 institutions, 32 institutions (25%) banned any collaboration between examiners, candidates, and members of the supervisory team either 'recently' or for specific periods from the previous two to five years. In 13 institutions (10%), there was a specific requirement that the examiners' own work should not be the focus of the research project.

Independence of the department or institution

In order to ensure that supervisors in different institutions did not habitually examine each other's candidates, 12 institutions (9%) explicitly banned reciprocal arrangements and 43% warned of over-use or limited the number of times they could examine within a given period.

Experience of examining

There is evidence (Kiley & Mullins, 2004; Mullins & Kiley, 2002) that examiners who are inexperienced in examination tended to have unrealistic expectations of what candidates should achieve, and were more critical than those who had such experience. This informed successive editions of the QAA Code (2004; 2014; 2018) in which institutions were asked to consider in what circumstances

they might appoint an inexperienced examiner and, if so, what support they would need.

Of the 127 institutions, 33 (26%) of them made no mention of a need for examiners to have previous experience of examination. In 27 institutions (21%), the external examiner was required to have experience of examination but not the internal examiner. In 19 institutions (15%), either the internal or the external was required to have previous experience of examination and a further 12 (9%) required both examiners to have experience. In the largest group of 34 institutions (27%), the requirement was that, between the two examiners, they had previous experience of examination.

Responsibility for nominating examiners

Clearly, the nomination of examiners is an important part of the process and data on this was available for all of the institutions. In 82 (61%), the nominations were formally made by the Director of Studies/Principal supervisor/supervisory team. In 24 institutions (19%), it was by heads of departments/directors of research institutes; and in 25 (20%), it was by doctoral college or faculty committees. In all of the cases where the nomination was by heads of departments or college or faculty bodies, there was a formal requirement to consult with one or more members of the supervisory team. Additionally, in 19% of the 127 institutions, there was an explicit requirement for candidates to be consulted about the nomination of examiners, although in all cases it was stated that they had no right of veto.

Responsibility for approving examiners

Once nominated, examiners have to be approved by the institution. Formally, this is done by the senior academic governing bodies, variously Senate or Academic Boards, but these normally devolve the responsibility to other bodies. Of the 127 institutions, information on where they were devolved to was available for 121. Of the latter, 62 institutions vested approval in research degree committees or sub-committees; 18 in doctoral colleges or graduate schools; six in quality and standards committees; and in the remaining 32 responsibility was devolved below the level of the institution to constituent colleges, faculties, or schools.

The examination

Once examiners have been nominated and approved, the actual examination begins with a review of the submission. While as noted on p. 167, the submission could take various forms, for present purposes the term 'thesis' is used as a shorthand for them all.

The initial stage of examination is obviously for the examiners to read and review the thesis, and all institutions required them to produce independent

reports prior to the oral examination. The first and perhaps most obvious purpose of these reports would seem to be deciding whether or not the thesis achieves the standard of a doctorate, and hence whether to proceed to the next stage of examination, the oral component. But, of the 127 institutions surveyed, only 20 (16%) made explicit provision for examiners to refer the thesis for further work before holding an oral. So, it is possible in most institutions for a candidate whose thesis has little or no chance of passing to proceed to the second stage of examination, the oral or *viva voce*.

A further feature of doctoral examination in the UK is that, in virtually all of the institutions, examiners' preliminary reports are treated as confidential and not available to candidates or to their supervisors prior to the oral, thus depriving them of the opportunity for formative feedback upon which to plan their thesis defence.

Moreover, within the UK, only a handful of people are present at that defence (QAA, 2020). These obviously include the candidate and the examiners and, depending on the policy of the institution, may include a member or members of the supervisory team and/or an independent chair.

The variability of the inclusion of supervisors was taken up in successive editions of the QAA Code (2004; 2014; 2018) which asked institutions to consider whether they should be present and, if so, whether this should be with the agreement of the candidate.

Of the 121 institutions for which information was available, three (2%) gave supervisors an absolute right to attend the oral examination; 88 (69%) allowed them to attend with the agreement of the candidate; 20 (16%) allowed supervisors to attend with the agreement of both the candidate and the examiners; in five (4%) supervisors could be invited by the examiners themselves; and in six (5%) supervisors were not allowed to attend the viva at all.

Where supervisors were allowed to attend, this was, with one exception, only as an observer who was only allowed to speak if invited to do so by the examiners. In the event of supervisors speaking out of turn, examiners were allowed to summarily dismiss them from the viva.

The issue of independent chairs was also highlighted in successive editions of the Code (2004; 2014; 2018). The reason for this was that, with the viva being held in private, there was what Anderson (cited in Morley et al., 2002, p. 264) has described as an 'awesome' potential for abuse by examiners when questioning candidates. There have been numerous horror stories (see, for example Tinkler & Jackson, 2002; 2004; Poole, 2015; Sikes, 2017) about examiners ritually humiliating candidates even when their theses had passed with flying colours.

One way of combatting this is for the viva to be chaired by an independent person. The latter are normally senior members of academic staff from other departments in the institution who are experienced in examining and familiar with and/or trained in the relevant rules and regulations. They are not examiners and in many cases do not even get copies of the thesis; their central role is to see fair play in the oral examination.

Data on chairing the viva was available for 107 institutions. Of these, 64% required independent chairs for every viva; a further 32% required them under specific circumstances (principally where there were two external examiners or where the internal examiner had limited experience of examining within the institution or where it was a second viva for a resubmission); in the remaining 4% of cases, it was always up to the internal examiner to chair the viva.

In addition, it may be noted that, in five institutions, there was a requirement to record the viva so that a copy was available in the event of complaints.

In terms of process, prior to the COVID-19 pandemic, the viva was conducted face-to-face on a standard format involving a short presentation or the option of a presentation followed by questions to, and discussion with, the candidate until the examiners felt they had heard enough to make a judgement. The candidate was then, along with the supervisor if present, asked to leave while the examiners deliberated. Normally, when they had made their decision, the candidate, and supervisor are asked back into the viva and informed of the examiners' recommendation to the institution.

Since the pandemic, virtually all institutions have moved vivas online, but with the option of the candidate deferring until an in-person one can be held. In practice, most candidates have opted for an online viva. For these, the format has remained largely the same as face-to-face, with three exceptions (see QAA, 2021b). First, there has been a greater use of independent chairs as a way of managing vivas in the online environment; second, there has been more use of recording to provide evidence in case of later dispute; third, more institutions have encouraged candidates to have a family member or friend with them to offer moral support during the viva generally or specifically at the end when examiners are giving their recommendations.

Data on the recommendations that examiners can make was available for 127 of the institutions. The key ones were:

- outright pass
All of the institutions had a recommendation to make an award outright with no further changes.
- pass subject to minor corrections
In total, 121 (95%) institutions had this option which usually involves typographical errors or small changes to the text or tables. Of these, the majority allowed candidates up to three months to make the changes, which were then signed off by the internal examiner without a further viva.
- pass subject to major corrections
In total, 80 institutions (63%) allowed for a pass with major corrections involving more substantive changes to the thesis; of these, time allowed ranged from four to six months. Normally, major corrections were signed off by both the internal and the external examiner, and again there was no second viva.

- pass subject to corrections
In total, six institutions (5%) did not distinguish between major and minor corrections but only specified corrections to be done within six months.
- pass subject to satisfactory viva or other form of assessment
In total, 34 institutions (28%) provided for a pass where the thesis was judged to be of the appropriate standard but the candidate was held to have failed the viva. Examiners have the option of a second viva or, where this would be inappropriate, a further assessment, e.g., a written one.
- refer and resubmit
In total, 124 of the institutions (98%) allowed examiners to judge that the thesis was not yet at the appropriate standard but was capable of reaching it and that further work was required followed by resubmission. Of these, 97 (78%) gave candidates up to 12 months to resubmit their theses while the remainder allowed up to two years. In all of these institutions, the revised thesis was considered by both examiners and in the vast majority of cases the decision about whether a further viva was required was left to the discretion of the examiners.
- be awarded a lower degree
All 127 institutions allowed examiners to recommend the award of a lower degree, either without further changes or subject to minor or major corrections and resubmission within specified periods.
- not be awarded a degree
Again, all 127 institutions allowed the examiners to recommend that a degree should not be awarded and that the candidate should have no further opportunity to resubmit for the doctorate.

A large-scale survey by DiscoverPhDs (n.d.) of over 23,000 PhD candidates who had successfully defended their theses between 2006 and 2017 found that 5% were awarded an outright pass, 79% a pass subject to minor corrections, and 16% subject to major revisions.

Summary

The key features of the UK system are:

- there is a common definition of the doctorate in terms of the QAA Framework;
- supervisors are normally specifically prohibited from examining their own students;
- normally at least one of the examiners must be external to the institution in which the candidate has studied for their doctorate;
- it is the candidate who is responsible for deciding when to submit their thesis and it is possible for them to go against the advice of their supervisors;

- in all institutions the formal criteria for appointment as examiners normally excluded supervisors, a majority included place of employment, subject knowledge, and previous experience of examining, while a minority specified that examiners needed doctoral qualifications, should be research active, and have not collaborated with the supervisory team and/or candidate;
- it is relatively rare for examiners to be able to refer a thesis, which is manifestly inadequate for further work without the candidate having to proceed to the viva;
- candidates and supervisors are not permitted to see the preliminary reports of examiners, and so do not then have the opportunity to prepare a defence in advance of the viva;
- oral examinations are held in private and this can lead to a potential for unprofessional behaviour;
- it is normally only at the conclusion of the viva that the recommendation of the examiners is revealed to the candidate;
- recommendations can span the entire range of outcomes from immediate award to irredeemable failure with interim outcomes of pass with minor or major corrections or resubmission with major corrections and re-examination or the award of a lesser degree.

Conclusions

If doctoral examination systems are to be judged primarily against the criterion of promoting objectivity, then that in the UK goes a long way towards meeting that through the imperatives that examiners are not involved with the candidates or their supervisors and that at least one examiner is external to the institution.

However, in terms of other criteria to be examiners, the UK seems relatively weak in terms of lack of requirements for examiners to hold doctorates themselves, being research active, and having no previous involvement with the supervisory team and/or candidate. This may of course be because these matters are deemed to be self-evident and hence not worth referring to in the relevant examination documentation.

In terms of the candidate examination experience, the UK system seems manifestly unfair in comparison with many others. In particular, the vast majority of institutions require all candidates to go through an oral examination even if their theses are seriously flawed; candidates are not given feedback from examiners on their theses before their vivas and hence are unable to plan their defences; and the vivas are private which creates a potential for abuse by examiners.

Some of these worst aspects of the UK system have been mitigated in recent years, for example, by institutions requiring examiners to have previous experience and/or making provision for independent chairs. It may also be that some of the innovations introduced during the pandemic, such as recording and allowing candidates to have personal supporters present in the viva, might be continued particularly if, as anticipated, online vivas become the 'new normal' (see QAA, 2021b).

But, as things stand, the UK still seems to have some way to go in making the doctoral examination transparent and fair to candidates and matching international best practice.

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UNITED STATES

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Introduction

American universities awarded close to 56,000 research doctorates in 2019 (National Centre for Science and Engineering Statistics [NCSES], 2020). The PhD constituted most of these degrees, although other types of doctoral degrees are also considered as research doctorates (including the EdD and the DSc). Not all institutions offer the research doctorate. A total of 449 higher education institutions (out of almost 4,000) awarded research doctorate degrees in 2019 (NCSES, 2020). Three-quarters of the degrees were awarded at institutions defined by the Carnegie Classification as doctoral-granting universities in the highest research category. Although research doctorates are offered at a range of institutional types, the significant percentage of those awarded by institutions in the highest Carnegie Classification has remained unchanged for many years (NCSES, 2020).

A discussion of doctoral examination approaches in the United States should begin with this: there is no national framework for doctoral examination in the United States. Determining if a student has completed the requirements to be awarded the research doctorate is an institutional-level decision, informed by the judgement of the faculty. Examples of this judgement will be provided in this chapter. Some influence might be found from professional associations specific to the academic discipline. Other influences are evident through the work of the seven independent regional accreditation commissions for higher education, while still others from industries or employers who hire doctoral graduates. Regardless of these influences, the doctoral degree (and the assessment of student learning as part of the degree) remains very much centred within the institution and the respective programme faculty.

This chapter explores the issue of examination policies and practices related to the research doctorate in American universities. This chapter defines the research doctorate and assessment in the US context; reviews the question of a national framework; outlines norms related to exams and dissertations; reflects on the role of the faculty as part of the examination process; and offers conclusions and implications about doctoral examination in the United States. In writing this chapter, the author conducted a web-based search of graduate school documents from five percent of institutions classified as doctoral-granting universities in the highest research category. The author also interviewed five graduate school and academic college deans in order to understand institutional similarities and differences as well as the influence of the academic discipline. Data from the web-based search identify the specific institution; data from the interviews do not.

Definitions of the doctorate and its assessment

Institutional, programme, and disciplinary-level variation make universal definitions of the doctorate challenging. The Survey of Earned Doctorates (SED) is funded by a consortium of federal agencies and provides an annual census of research doctorates awarded in the United States. Since 2011, the SED has recognised 18 different types of research doctorates. ‘Doctoral degrees are not static entities, and changes in the focus of the doctoral programmes awarding a particular type of doctoral degree may make the “research doctorate” designation more or less appropriate for the degree’, notes the SED (National Centre for Education Statistics [NCES], n.d., p. 1). The research doctorate is considered separately from the professional doctorate. The latter focuses on knowledge, skills, and techniques specific to a professional field, and norms for such degrees are comparable to (but not always the same as) the research doctorate.

Almost all earned research doctorates in the US share common features including:

1. several semesters of taught, in-classroom courses;
2. comprehensive and/or qualifying exams at specific curriculum milestones;
3. a written dissertation featuring a student’s original research, accompanied by an oral defence in front of a faculty committee.

Each of these features involves examination to determine if a student is prepared to move to the next stage of the degree programme.

(Lack of) a national framework and influences on examination

In recent decades, greater attention has been given to the question of learning outcomes and doctoral education in the United States. Much of this attention is rooted in the low retention and graduation rates across some disciplines,

institutional types, and student demographic groups. One response to this concern has been from accrediting groups. A Council of Graduate Schools study found that among chief officers of accreditation groups whose focus includes graduate education, three-quarters reported paying closer attention to outcomes assessment compared with a decade ago (Denecke et al., 2017). Of significance, however, is that this concern seems largely focused on outcomes assessment related to professional doctorates (Doctor of Nursing Practice–DNP, Doctor of Physical Therapy–DPT, etc.) compared with research doctorates. The research doctorate it seems remains removed from the discussion of outcomes assessment.

Arguments in support of a national framework related to doctoral education emphasise the ability of such an approach to provide unique perspectives on the ways in which key milestones of a doctoral curriculum contribute to specific outcomes. For example, the evaluation of the dissertation allows faculty, administrators, and other key stakeholders to reflect on skills gained during the dissertation process as well as the role of the dissertation in a graduate's career outcomes. Understanding the scaffolding of knowledge elements as part of coursework can help inform the timing of later milestones such as qualifying exams and the dissertation. Opponents of a national framework emphasise the importance of faculty autonomy; the ability of faculty to uniquely understand the doctoral curriculum on their campus; and the ability of faculty to assess student learning outcomes. Regardless, no shared consensus exists on the role of a national framework in assessing doctoral work. Questions related to coursework, required exams, and the dissertation process are answered by faculty within the academic discipline and department as well as the specific institution.

In sum, the lack of a doctoral framework in the United States is an example of the highly decentralised and independent nature of the higher education system. While pressures towards conformity exist, particularly in terms of policy, issues of practice are deeply rooted in the academic discipline, faculty norms, and institutional realities. Given the large number of research doctorates granted by institutions ranked in the highest Carnegie research category, however, pressures of normative conformity result in little deviation from accepted norms.

Qualifying, oral, and comprehensive exams

Qualifying, oral, and comprehensive exams are prevalent across research doctorate programmes, but the format varies according to the academic discipline and the institution. One commonality across formats is the importance of students demonstrating a mastery of knowledge gained from coursework (with the completion of approximately 14–18 courses over two years) and the ability to complete dissertation research. Some programmes approach the exams as a miniature dissertation proposal that incorporates knowledge from coursework and encourage the application of this knowledge to the dissertation topic; this approach usually sees exams occur in the final semester of coursework, and the product is typically assessed by department faculty. Other programmes require students to

collaboratively write a journal research article with their research supervisor or present an original oral argument about a key issue in the discipline that synthesises knowledge from the required coursework.

The approach varies not only in format, but also in student initiative and timeline. One graduate school dean shared that at his university, doctoral students are required to sketch out their own topics for examination. Relying on a structured programme of study that includes set courses in theory, research methods, and cognate/speciality areas, the exam is assessed on the ways in which the student proposes to apply this knowledge to the dissertation area of interest. The dean added the observation that it is just as difficult to write robust questions as to answer them, and that this approach enabled students to do both.

The question of how the exam is structured is accompanied by questions of who assesses the exam. An important difference seems to be whether the faculty as a whole (or a representation of the faculty) evaluate the results, or whether the student's chair and likely dissertation committee conducts the primary assessment. Both approaches have drawn criticism for the potential for bias and the perceived lack of objectivity.

A summary of the different types of exams is offered as follows:

Qualifying exam: Not all doctoral programmes have a required qualifying exam. For those that do, students must pass the exam early in the programme (usually by the second or third semester of coursework, but well before they complete the required coursework). Students who do not pass the exam are dismissed from the programme. Often students can repeat portions of the exam deemed deficient by the committee to avoid expulsion. Taken early in the student's coursework, the qualifying exam serves a curious purpose of assessing a student's prior knowledge, knowledge gained in initial courses, and readiness to move forward in the programme; these purposes do not necessarily relate to the future dissertation. This assessment is done through a range of written and oral processes.

The University of Arizona's PhD programme in Teaching, Learning, and Sociocultural Studies requires students to prepare a written paper that presents 'an academic argument grounded in the literature, represents [the student's] work and interests as a doctoral student, and includes a review of related research' (University of Arizona, n.d.). The student must orally defend the paper in front of a committee, which consists of faculty from the academic department. In Stanford University's electrical engineering PhD programme, students do not write a paper, but rather give an oral presentation to a faculty committee. The committee is charged with determining if the student shows evidence of research preparedness.

A critique of these early-stage exams focuses on what value they provide to the student and what insight is given based on the student's performance to the programme faculty. One dean questioned the effectiveness of the admissions process in relation to the qualifying exam by posing the

question: Does the process of admissions provide evidence of a student's ability to be successful in the programme, and if not, what needs to be changed about admissions?

Oral and comprehensive exams: Oral and comprehensive exams typically occur after the student has completed coursework, which may take up to two or three years. In the African-American Studies PhD programme at Harvard University, students are required to complete an oral examination at this time. The committee consists of three faculties, including the student's major advisor. The committee works closely with the student to identify a bibliography and relevant topics. After time for preparation, the student orally presents and defends the response. If successful, the student then prepares a written prospectus, which serves as a stepping stone to the dissertation. The PhD in materials science and engineering at Penn State University requires a comprehensive exam; students are expected to demonstrate comprehensive and integrated knowledge as well as a plan for dissertation research. This demonstration occurs through a written paper (which can be a blueprint for the future dissertation) as well as an oral defence and is assessed by a faculty committee.

During the web-based search conducted for this chapter, the exam formats were commonly described in the student handbooks for the specific academic department rather than for the entire institution. Attention was given to procedure and policy – for example, how many members of the faculty should sit on the committee; how long a written response should be; how long an oral presentation should be; and so on. In only a very small minority of cases were rubrics or related criteria for examination provided to students. Some rubrics simply asked committee members if a student had 'met expectations' for the specific question; the difference between 'met expectations' and 'exceeded expectations' related to the assessor's understanding of how thorough the knowledge was perceived to be. Programmes that provided more detail on the rubric related to the exam included criteria such as integrating ideas within the field; generating novel, testable hypotheses; and outlining strengths and weaknesses of specific research designs and approaches.

On the one hand, the oral or comprehensive exam serves as a bridge between the status of a student and the status of a doctoral candidate. This significant milestone signifies to students their progress towards degree and provides evidence of their readiness to complete dissertation research. On the other hand, if a student has successfully completed the required coursework, they have already demonstrated readiness for the dissertation. The exams might be an unnecessary obstacle in student progress. The exam is not always perceived as additive to student learning and rather serves as a historical artefact. The format of the exam is often unfamiliar, not something students would ever encounter again or relate to their future endeavours. Without clear understanding or agreement on the role of

coursework in student learning outcomes, the relationship between coursework and these exams is not clear.

Like the qualifying exam, students must receive a pass to move forward in the programme and begin dissertation research. Some departments described processes by which students could remediate all or parts of the exam determined to be insufficient.

Dissertation

Doctoral students in the United States commonly begin working on the dissertation at the conclusion of coursework. The dissertation chair (the student's primary faculty advisor) remains a crucial element of the examination process. The chair is typically the person who signals to the rest of the committee that a final defence is imminent and that the student's dissertation outputs are ready for a defence. The student typically does not initiate the final defence without the approval of the chair.

Absent guidance from a larger institutional or external framework, examination, and assessment of the dissertation product resides with the dissertation committee, chaired by the student's primary advisor. At Duke University, it is simply summed up in this way: 'The dissertation must be completed to the satisfaction of the professor who directs the dissertation (dissertation advisor), members of the student's milestone committee, and the academic dean of The Graduate School' (Duke University, 2020, p. 57).

Historically, the common approach towards examination of the dissertation assumes that each member of the committee possesses expertise in all or part of the dissertation topic. The committee's judgement would reflect this collective expertise as part of the examination. However, the massification of doctoral education in the United States along with a reduction in the number of faculty deemed qualified to sit on the dissertation committee challenges this assumption. Instead of collective expertise, the committee may reflect those with tangential or related expertise in the topic, or perhaps those with related experience in non-academic sectors. Some committee members in this case become advisors to the process rather than experts in the topic. While relying on the evaluation provided by other members of the committee, such members may also rely on student skills acquired through the curriculum. Has the student's programme of study prepared them to define a topic of relevance, formulate a compelling research question, or identify gaps in the literature? As a result, the committee's explicit evaluation includes not just the written document and the student's oral defence, but also implicitly, the programme of study, the perceived rigor of coursework, and the perceived rigor of the programme's faculty and accompanying research.

How is the institution itself informed of the committee's decision regarding the dissertation, and articulate its support of the decision related to awarding the degree to the student? One signal relates to the composition of the dissertation

committee; that is, the institution must approve the committee formation before the actual defence, indicating its willingness to accept the committee's decision. A common approach is to have an outside committee member, usually outside the student's department. At some institutions, this person is a graduate student representative while at others, the person must hold a doctorate and have significant experience in the field. Regardless, the outside committee member is presumed to provide some sort of quality control and validation that not only is the research itself rigorous and worthy of the doctorate, but also that the process proceeded in ways aligned with fair treatment and ethical decision making. However, this person is only one committee member, among the company of the student's programme faculty, raising questions the presumption of objectivity and fairness.

Multiple signatures typically follow those of the dissertation committee, including from the department chair and the academic college dean. Often these individuals are not assessing the content of the dissertation, but rather providing their verification that the process has played out in ways aligned with institutional policies and disciplinary-specific norms.

In the same way as web-based searches for qualifying, oral, and comprehensive exams, searches for dissertation examinations provided results that primarily focused on questions such as committee formation, timeline, formatting of the document, and so on. Fewer searches provided evidence of content-based criteria, and even fewer gave rubrics or other related documents to the dissertation. Among those rubrics located, common criteria included expectation-based outcomes related to quality of writing and communication as well as the perceived contribution to the discipline. Institutions usually ask the committee for a pass or fail decision. A pass decision may assume that the student needs to make edits suggested by the committee; some institutions allow the student to repeat the defence if a fail decision is initially determined.

Examples of the dissertation defence at two research universities are provided as follows.

PhD students enrolled in The University of Chicago Booth School of Business are required to select a dissertation area upon admission; options include Accounting, Behavioural Science, Econometrics and Statistics, Economics, Finance, Management Science/Operations Management, and Marketing. Coursework is tailored to the student's dissertation area. After coursework, students write a dissertation proposal, which is then defended in front of an audience of faculty, students, and other community members. The process is repeated for the final defence. There is no closed defence with the committee required of the student. Decisions are made by a faculty committee.

The PhD programme in Chemistry at Duke University requires students to complete original research for the dissertation, with a duration of at least a year. The final dissertation is presented at a public seminar, followed immediately by a closed defence to the dissertation committee. Faculty on the committee make the decision as to whether the student has passed the defence.

The role of the faculty

As noted, faculty are given great authority and independence to determine whether a student's performance at different examination stages is worthy of a pass, and ultimately the receipt of a doctoral degree. Across almost all institutions surveyed for this chapter, this fact held true. Faculty were considered qualified by the fact that they worked at the institution. Criteria related to tenure-status as well as years in rank were evident but less common. The number of faculty per committee varied by the student's stage in the programme, although three to five seemed to be the most common for all stages. Some differentiation was made between an outside member (outside the student's primary academic department, but still at the same institution) and an external member (a faculty from another institution). But most commonly, the committee structure was populated by faculty from the academic department, including the primary advisor/chair and other departmental faculty who may have worked with the student in coursework or other activities.

The University of Southern California (USC) spells out the qualifications of faculty who serve on committees: '[faculty] must have a professional profile that demonstrates academic impact on the field in significant, measurable ways' (USC, 2021). The measurable qualifications are determined through what the university deems as 'hard evidence', including peer-reviewed publications, grant funding, and 'exceptionally influential practice'. No indication is given of the expected number of publications or grants.

Students are typically responsible for inviting faculty to serve on their committees, working in concert with the primary advisor and/or chair.

Summary

Some key features of the US system are:

- a highly decentralised model and lack of national framework means that faculty, institutions, and disciplinary associations are responsible for assessing doctoral work;
- the student's chair or advisor along with a faculty committee are involved in all examination processes across the degree programme;
- the committee primarily consists of faculty from the student's home academic department. The institution may require a member from outside the department. The committee composition may change slightly as the student progresses from qualifying, oral, and comprehensive exams to the dissertation, but the core committee usually stays the same;
- even in cases where students defend the dissertation orally, in a setting open to the public, they typically (but not always) meet with the committee for a private, closed-door defence;

- in general, faculty are deemed qualified to be part of a committee and assess student work based on their employment status (i.e., employed at the respective institution), although issues such as tenure status, research productivity, and years in rank are also considerations.

Conclusions about doctoral examination in the United States

The US approach towards doctoral examination seems to succeed on some levels. The abbreviated web-based search for this chapter, for example, identified numerous programme guidebooks, manuals, and Graduate School catalogues that outlined issues of timing and procedure related to the exams. Yet these same sources revealed little about the criteria in which committees might assess student examinations. The lack of defined criteria from the department, the institution, or an external source means that students may not be clear about expectations and outcomes.

A similar contradiction can be found with the composition of the student's committee. On the one hand, most institutions seemed to require at least one committee member from outside the student's department and in some cases, the institution. However, the student's primary advisor and department faculty retain much control over the process, raising questions about objectivity and fairness, especially considering the lack of assessment criteria.

Questions have persisted for decades regarding the need for multiple exams at different stages of the curriculum as well as the format and structure of the dissertation and its defence. These questions are intertwined with the large amount of coursework that doctoral students must complete at the start of the programme, a unique feature of the US system compared with other countries. Absent some larger unifying influence, it seems unlikely that changes will occur to the exam structure and degree format any time soon. While the COVID-19 pandemic has brought some changes to the doctoral process, including a greater acceptance of virtual defences and a willingness to extend students' timelines, these changes seem only at the edges of the larger questions of efficacy and it remains to be seen whether or not the changes will last.

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CONCLUSIONS

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Introduction

The preceding chapters have provided accounts of the ways in which the doctorate is examined in 20 doctoral awarding countries. The aims of this chapter are to set out the findings across all the case studies; discuss them; and provide some initial conclusions about doctoral examination across the globe.

National frameworks for doctoral examination

In all, 18 of the 20 countries had national frameworks for the standards of doctoral degrees. In nine cases (China, Egypt, France, India, Russia, Japan, Spain, Sweden, and Turkey), these were set out in legislation; in a further nine (Australia, Germany, Italy, Kenya, Malaysia, New Zealand, South Africa, Uganda, and the United Kingdom) they were embodied in national qualifications frameworks.

The two countries which had no national frameworks were Brazil and the United States where the definition of the standards of doctoral awards was exclusively a matter for institutions.

The nine countries which legislated on standards also specified in law the form of the doctoral examination, i.e., with the dual stages of examination of the doctoral thesis and examination of the doctoral candidate. This model was also common in many of the countries where the form of the examination was left up to institutions, including Germany, Italy, Malaysia, New Zealand, Uganda, and the United Kingdom.

But there were two countries, Australia and South Africa, where it was normally only the thesis that was examined and not the candidate. The reason for this is historic; in both, institutions required at least one international examiner, often drawn from the United Kingdom. In the days when the predominant mode of

international travel was steamship, it would have been unrealistic to ask examiners to spend weeks travelling for a short viva, so the latter was dispensed with. Of course, this argument no longer applies, and some institutions in Australia now examine the candidate as well, but this is the exception rather than the rule.

In seven of the countries (China, France, Malaysia, South Africa, Spain, Sweden, and Turkey), procedures for the conduct of doctoral examinations were set out in law. This was also the case for most institutions in Russia, apart from a handful which had been given their own awarding powers and discretion to decide upon how to conduct examinations. In a few other countries, there were decrees (Royal Decree 496 in Egypt) or national codes of practice (for example the Code for Responsible Conduct of Research in Australia or the QAA Code of Practice for Research Degrees in the United Kingdom) which covered the conduct of doctoral examinations and provided a framework for institutions. In the remainder, ultimately decisions as to conduct were left to individual institutions.

Arrangements for assessing progress during candidature

Arrangements for assessing progress during candidature depended upon the characteristics of doctoral degrees, in particular the balance between the taught and research components of awards.

Historically, there has been a distinction between the model of the doctorate whereby candidature is spent almost entirely in undertaking a research project, and the one involving candidates undertaking significant taught components before embarking upon the research stage. In practice, these boundaries have been considerably blurred in recent years with the greater adoption of taught components in traditionally entirely research-based doctorates and by the introduction of new forms of doctorates, in particular professional doctorates. But despite this convergence, differences remain between countries in the pre-examination assessment of the doctorate.

Of the 20 countries in the present study, in 13 the dominant form was the traditional research doctorate. In these, the assessment of progress took the form usually of a confirmation of candidature event within 12 months of starting although in some cases it was later (for example in Spain 12–18 months). This was then followed by regular reviews usually at six-month intervals but in some cases (for example Egypt, Italy, and Spain) reviews were annual. There was some variation in procedures for review; in India, assessment was solely by the supervisors, in Italy it was by the Doctoral Programme Committee, in Spain candidates presented so-called ‘Activity Reports’ to their supervisors who then passed them to Programme Academic Committees, while in Sweden candidates gave seminars on their work involving assessors outside the supervisory team and on occasion outside the university.

The remaining seven countries included the world’s two largest producers of doctoral graduates (China and the United States) as well as Brazil, Japan, Malaysia, Russia, and Turkey. These all had doctoral degrees with significant

taught components which were formally assessed in qualifying examinations before candidates were allowed to proceed to produce research proposals which were also subject to assessment by comprehensive examinations. But again, there were variations between systems.

So, for example, in China and the US candidates were required to complete all their coursework and pass their qualifying examinations before developing a research proposal which was then subject to comprehensive examination. But in Malaysia, candidates were not only expected to have passed their coursework but to have completed the first three chapters of their thesis and undertaken a pilot study before taking this step. So, in the former cases, the qualifying examination was measuring preparedness to undertake a research project, while in the latter it was measuring progress towards completion.

Once candidates have completed their qualifying and comprehensive examinations, they then entered the research phase of their degree. Here, monitoring of progress depended on the system; in some, advisory committees paid close attention to completion, which in others they did not, leading in the US case to the well-known phenomenon of 'ABD' (all but dissertation), that is, a doctoral candidate who has completed the required courses and examinations but not the dissertation.

Arrangements for submission

In most of the countries, candidates were not allowed to submit their theses for examination without the approval of their supervisors. But this was not the case in four countries (Japan, Sweden, the United Kingdom, and most universities in New Zealand). In fact, in the United Kingdom, 98% of institutions allowed candidates to submit without their supervisors' consent, although in all cases they were advised to seek it.

In Uganda, consent was needed from the supervisor for the submission to the Doctoral Committee, which took the final decision.

In other cases, as will be seen in the section on examination structures, candidates had to undergo a formal pre-examination to confirm that their theses were worthy of defence before going forward to the final examination.

Nomination of examiners

In all the countries, supervisors had a role to play in the nomination of examiners. In Australia, Egypt, Germany, India, Malaysia, and Spain, they made the nominations themselves. Where nominations were made by other persons or bodies (as in China, Russia, Italy, and United Kingdom) supervisors were invariably consulted.

Candidates were not, however, invariably consulted. In six countries (Brazil, France, New Zealand, South Africa, Sweden, and Turkey), they were normally consulted and allowed to suggest names of potential examiners. In other

countries, for example the United Kingdom, practice varied between institutions, and some did require that candidates were consulted while in others there was no such requirement.

Once, with or without student involvement, examiners are nominated, the final selection must be approved by the doctoral awarding institution.

The criteria to be appointed as examiners

In most of the countries studied, the number of examiners ranged between two and five, although in a few cases the number may be much larger (up to 19 in Russia!).

In seven of the case studies (Brazil, Egypt, Germany, Japan, Kenya, Turkey, and the United States) the supervisors were among the examiners.

For other examiners, the criteria included:

- employment status – in Australia, Malaysia, New Zealand, and the United Kingdom, examiners had to be employed by universities, although exceptions could be made for example with examiners for professional or industrial doctorates;
- rank – in China, France, India, Kenya, Uganda, Malaysia, Sweden, and Turkey, it was a requirement that examiners should be Associate or full Professors while in the United Kingdom, Australia, and New Zealand, there was no stipulation;
- qualifications – examiners in France, Germany, and Russia were normally expected to have a higher doctorate (habilitation or Doctor Nauk) while in most of the others, the normal requirement was that they had a PhD or equivalent research experience;
- research active/experts – examiners were formally expected to be research active or considered experts in eight of the case studies (Australia, China, India, Malaysia, New Zealand, Russia, South Africa, and Spain);
- experience in supervision and examination – in Australia, Brazil, Malaysia, New Zealand, and the United Kingdom, examiners were normally required to have previous experience in supervising and/or examining candidates;
- independence from the supervisory team – in Australia, New Zealand, South Africa, and the United Kingdom there were requirements that the examiners should be independent of the supervisory team.

Externality in the examination process

In all the case studies, examination panels included examiners who were outside of the supervisory team, and in that sense could be described as 'external'. However, such members of the panel could include colleagues from the same department or another in the awarding institution or from another institution within the same country or from another institution outside the country.

Among the case studies, there were five (Brazil, China, Germany, Japan, and the United States) where ‘externality’ could mean either examiners drawn from the awarding institution or, in some cases, from another institution within the country. In 11 countries, (Egypt, France, India, Italy, Kenya, Russia, Spain, Uganda, Sweden, Turkey, and the United Kingdom) there was a requirement that at least one member of the examination panel should come from another institution either within or outside the country. In the remainder (Australia, Malaysia, New Zealand, and South Africa), it was normally a requirement that at least one external should be from another country.

Pre-examination procedures

Among the 20 countries, eight (China, Egypt, France, Italy, Japan, Kenya, Russia, Spain, and Uganda) had formal pre-examination procedures designed to filter out theses that would be unlikely to succeed before the final examination.

In China, pre-submission and pre-oral defences were undertaken by evaluation committees consisting of three to seven members, typically professors from the home university and other universities. In Egypt, the candidate was expected to present the thesis draft to the department for approval before the final submission, while in Spain, a Defence Committee was formed (with three to five external members) to preview the thesis. In France, pre-examination took the form of two reviewers (who were usually professors and one external to the institution) who were appointed by the vice-president to review and provide a report on the thesis and its chances of success.

In Italy, there were two different stages of pre-examination. In Stage 1, an internal evaluation was undertaken, and the thesis is submitted to the Doctoral Programme Committee (DCP) consisting of 16 academic staff from relevant disciplines and including the supervisors. After a positive recommendation by the DCP, the thesis progressed to Stage 2. In this, two referees from outside the DCP were appointed to review the thesis and decide whether the thesis was strong enough to proceed to the final oral examination.

In Russia, there was also a formal pre-examination with two reviewers, in this case appointed by the department. The candidate was expected to submit the complete thesis and a summary of the dissertation to these reviewers and make an oral presentation in the presence of five examiners and other professors and researchers from other departments in the institution with specialised expertise in the research area. Following this, reviewers submitted their reports recommending whether the candidate should proceed to the official submission of the thesis.

In all these cases, candidates had the opportunity for feedback prior to submission, and if their work was deemed unsatisfactory, an opportunity to improve it before asking for further approval to submit.

As well as these formal pre-examinations, in some countries there were fewer formal procedures. In India, the viva was only normally held after receiving favourable reports from the external examiner. In some Australian universities,

candidates were encouraged to give a departmental seminar on their thesis prior to submission to gain feedback, whereas in many Swedish universities the department organise a preparatory mock defence with a few of the academic staff who read parts of the thesis and ask questions to mimic the actual procedure of the examination.

In other cases, for example Germany, Malaysia, New Zealand, South Africa, Turkey, the United Kingdom, and the United States, there were not mechanisms of these kinds to rescue a potentially failed thesis and it was left to supervisors to filter submissions.

The form of the viva

In all, vivas were mandatory in 18 of the countries studied, with as noted earlier the major exceptions of Australia and South Africa.

Vivas varied according to the three dimensions of who attended, whether the candidate had prior notification of the issues to be raised by the examiners, and whether they were judgemental or ceremonial.

Firstly, in terms of attendance, there were two variants:

- ‘closed’ vivas where only the candidate, the examiners, perhaps the supervisor (but only in the capacity of a silent observer), perhaps a convenor or independent chair, and in some cases one supporter for the candidate (New Zealand, Malaysia, and the United Kingdom);
- ‘open’ vivas where family members, relatives, friends, colleagues, faculty members, and general public are allowed to attend (Brazil, China, Egypt, France, Germany, India, Italy, Japan, Kenya, Russia, Sweden, Spain, Turkey, Uganda, and the United States).

Secondly, with regard to prior notification, as was seen earlier, in many countries there were pre-examination procedures designed to determine on the basis of the thesis whether or not a candidate should go forward to the oral examination, whereas in eight cases there were no such formal mechanisms. But in two other cases, those of Brazil and New Zealand, candidates were given sight of the examiners’ reports (and in the latter case of their questions as well) in advance of the viva so that they could prepare.

Thirdly, vivas varied in terms of the combination of ‘judgemental’ and ‘ceremonial’ functions. Here, following Kumar et al. (2020), there were three categories:

- ‘pure’ judgemental vivas where depending on the thesis and the candidate’s performance in the viva, the outcome could be pass (outright or with conditions) or fail (Germany, Malaysia, New Zealand, Turkey, and the United Kingdom);
- ‘hybrid’ vivas where failure was theoretically possible but unlikely and the oral examination was a rite of passage into the research community (Brazil,

TABLE X.1 Typology of forms of the viva

<i>Attendance</i>	<i>Pre-exam/feedback</i>	<i>Function</i>	<i>Cases</i>
Closed	No	Judgemental	Malaysia, The United Kingdom
	Yes	Judgemental	New Zealand
Open	No	Judgemental	Germany, Turkey
	No	Hybrid	The United States
	Yes	Hybrid	Brazil, China, Egypt, France, Italy, Japan, Kenya, Russia, Sweden, Uganda
	No	Ceremonial	India
	Yes	Ceremonial	Spain

China, Egypt, France, Italy, Japan, Kenya, Uganda, Russia, Sweden, and the United States);

- ‘ceremonial’ vivas where it was usually known that candidates had already passed and the purpose was primarily to celebrate their achievements (India and Spain).

These are summarised collectively in [Table X.1](#).

So, the most common form of the viva was open to the public where candidates’ theses were subject to pre-examination checks or where they were informed of examiners’ views before the viva and where failure was possible but rare.

The outcomes of the examination

In 15 of the case studies (Australia, Brazil, China, France, India, Japan, Kenya, New Zealand, Russia, South Africa, Sweden, Turkey, Uganda, the United Kingdom, and the United States), the final outcome was pass or fail. Within this, variants ranged from an outright pass, pass with minor corrections, pass with major corrections, fail, and revise and resubmit, the award of a lower degree, re-submission for a lower degree, or in extreme cases outright failure.

Until recently, France had a system for grading pass doctorates, but that has now been abandoned leaving Egypt, Germany, Italy, Malaysia, and Spain as the only countries in the sample distinguishing between levels of the doctorate. Pass grades in Egypt were ‘excellent’, ‘very good’, ‘good’, and ‘pass’, whereas Germany had the four pass grades of summa cum laude (with highest honours), cum laude (with honours), laude (good), and rite (sufficient). In Italy and Spain, there was an option to award the doctorate with ‘cum laude’, and in Malaysia it could be awarded with distinction.

Discussion

From the findings, seven key features may be highlighted for discussion.

National frameworks

The case studies suggest overall that there seems to be a high degree of comparability of doctoral standards internationally. In the cases of the countries in Europe, irrespective of whether their doctoral standards were embodied in legislation and/or a national qualifications framework, they were all formally aligned to the overarching European Qualifications Framework (EQF). The national qualification frameworks of other countries, including Australia, India, Kenya, Malaysia, New Zealand, Uganda, and the United Kingdom, were also closely aligned to each other and compatible with the EQF. In other cases, there seem to be no national frameworks, and hence at least formal way of comparing standards.

Arrangements for submission

It was notable that, of the 20 countries, 15 required a sign-off by supervisors that theses were worthy of defence before candidates were allowed to submit, while in a further one permission was also required from the Doctoral Committee. This left four (Japan, New Zealand, Sweden, and the United Kingdom) where candidates had an absolute right to submit even if they had not consulted their supervisory team or the latter were opposed. The justification for this is that the candidate should know whether his or her thesis will pass muster, which would seem to be a very strong assumption and one that requires justification.

Nomination of examiners

While supervisors were invariably consulted on the nomination of examiners, candidates were consulted in less than one-third of the countries studied. Although candidates must not, of course, be able to determine who will examine their work, there is a strong case for at least consultation.

Given that the candidates might well have had the opportunity to interact with potential examiners (via conferences, seminars, or reading their work or through other networks), they can provide additional scrutiny of potential examiners.

Further, as Kiley (2009, p. 902) has suggested, candidate involvement in the nomination of examiners should be encouraged because a significant proportion '...are likely to engage in an academic career, discussing issues of examination, the characteristics of appropriate examiners and the careful analysis of reports during candidature might assist graduates when they themselves become supervisors'.

Finally, an additional benefit of getting candidates involved in the nomination of potential examiners is that it can help the candidate to acquire a sense of audience especially when conversations about potential examiners are held early during the candidature (M. Kiley, personal communication, February 2nd, 2021). Candidates may possibly find authentic and meaningful purpose for the writing by considering such an audience for their work.

Criteria to be appointed as examiners

One surprising finding was that so few countries required that examiners other than the supervisory team should be independent of the latter; only three countries insisted that this should be the case. The dangers of this are that, with supervisors playing the primary role in nominating examiners, may nominate colleagues that they know will be favourable to the candidate, as was graphically illustrated by the case of Egypt. This might be a stipulation which other countries could consider adopting.

Another not surprising but inadvertent consequence of the criterion for rank is that in many countries early career academics are effectively debarred from examining, which of course raises the question of how they can learn about the standards and procedures for examination. This can be a particular issue if they are working in another institution than the one they studied in and/or in another higher education system. While seniority should continue to be a criterion, more could be done to allow junior academics to participate in doctoral examinations and be mentored by experienced colleagues, as happens in New Zealand and South Africa.

Externality in the examination process

As has been seen, notions of externality vary from colleagues within the same department or institution through those from another institution within the same country or indeed from one in another country. Regarding the first category, there is clearly an issue about the independence of the examiners, and potentially about the quality of the doctorate, which is why so many countries insist on externality in the second and third definitions. That said, there is evidence (see Nir & Bogler, 2021) that even external examiners from another country may be selected because of their supposed affinity with the candidate's work or that, if they have reservations about award, these can be brushed aside or ignored.

Pre-examination procedures

Most of the countries in the sample had formal or in some cases informal procedures designed to evaluate the thesis prior to submission and to decide whether the candidate should proceed to the oral examination or whether further work was required. These procedures have the great advantage of ensuring that candidates receive formative feedback at this stage of their studies and enabling them to either progress to the viva with confidence or to undertake any necessary additional work. In systems which do not have such procedures, the reliance is upon supervisors to filter out unsatisfactory theses, but this does not always happen, and candidates can be set up to fail.

The form of the viva

In most of the case studies, vivas were open, thus permitting scrutiny of the examination process; candidates had either passed a pre-examination test or were forewarned and forearmed about questions; and there was little uncertainty about the outcome. However, in a few countries, vivas were closed, candidates were not told of examiners' opinions or able to prepare the answers to questions, and there was uncertainty about the outcome. As a result, the viva could become a huge ordeal for candidates, rather than a rite of passage into the research community and a celebration of their achievements.

Conclusions

This is the first large-scale study of doctoral examination in 20 countries accounting for just under three-quarters of the global output of doctoral graduates. It has uncovered significant variations in the ways in which doctoral degrees are defined and examined, particularly in relation to arrangements for submission, the nomination of examiners, criteria for examiners, the extent of externality in the examination process, the use of pre-examination procedures, and the form of the viva. In the final section earlier, several issues have been identified which may hopefully stimulate debate about some of the national features of doctoral examination.

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