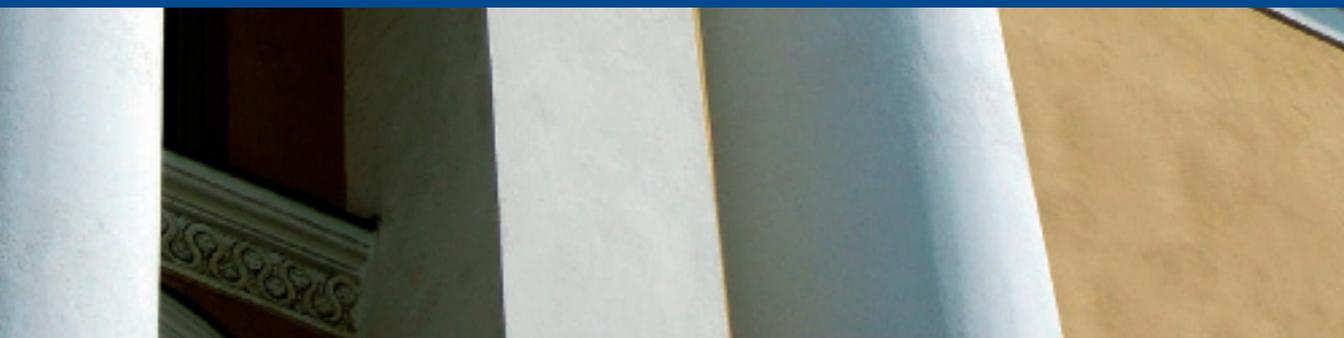Alexandra Bitusikova, Janet Bohrer, Ivana Borošić, Nathalie Costes, Kerim Edinsel,
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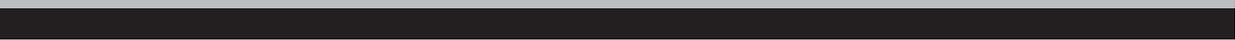
Quality Assurance
in Postgraduate Education

ENQA

Alexandra Bitusikova, Janet Bohrer, Ivana Borošić, Nathalie Costes, Kerim Edinsel, Karoline Holländer, Gunilla Jacobsson, Ivan Filip Jakopović, Mary-Louise Kearney, Fred Mulder, Judith Négyesi, Manuel Pietzonka

Quality Assurance in Postgraduate Education

Education and Culture DG

Lifelong Learning Programme

This project has been funded with support from the European Commission in the framework of the Lifelong Learning programme. This publication reflects the views of the authors only and the Commission cannot be held responsible for any use which may be made of the information contained therein.

The present report can be downloaded from the ENQA website at http://www.enqa.eu/pubs.lasso

Cover design and page layout: Eija Vierimaa

Edited by Nathalie Costes and Maria Stalter

Helsinki, Finland, 2010

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Foreword

Since the nineties, the development of the Knowledge Society has had a profound impact on research and higher education. By definition, the Knowledge Society is characterised by the production and dissemination of knowledge, and this is precisely the mission of research universities. Therefore, being one of the main actors in building the Knowledge Society, research universities have been confronted by an increasing demand for postgraduate education. In order to be more competitive, European higher education systems must meet the needs of the Knowledge and Information Society and the demands of the global labour market. In 2003, the European ministers of Higher Education tried to address these needs by recognising the European Higher Education Area (EHEA) and the European Research Area (ERA) as the two pillars of the knowledge-based society and as a new action line of the Bologna Process. In order to strengthen the link between the EHEA and the ERA, the ministers also considered it necessary "to include the doctoral level as the third cycle in the Bologna Process".

It followed that reforming doctoral programmes in terms of curriculum design and structure became the key priority, as well as redefining the role of universities, providing them with more autonomy and accountability and encouraging them to "increase the role and relevance of research to technological, social and cultural evolution and to the needs of society"[1].

This report focuses on postgraduate education in Europe, its evolution and major challenges for quality assurance. It presents national experiences and approaches to quality assurance of postgraduate education and offers viewpoints from the main stakeholders in higher education, namely higher education institutions, doctoral candidates, and quality assurance agencies. This report contributes to the important debate on quality assurance of postgraduate education and will hopefully provide insight into the future direction of this dynamic topic.

ACHIM HOPBACH,
President
European Association for Quality Assurance in Higher Education (ENQA)

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1   Ministerial Communiqué of 2003

Introduction

Nathalie Costes, Project Manager, ENQA and Radu Damian, Director of the Department of Quality Evaluation, ARACIS

The concern for quality of education is a decisive parameter for the credibility, scientific and/or professional value of each of the three academic cycles. As the Bologna declaration points out, the two main cycles – undergraduate and graduate – must be "relevant to the European labour market as an appropriate level of qualification".

While the role and value of research is clear in doctoral studies, in some countries the understanding of the role and professional value of Master's studies is not obvious, and not yet followed by professional recognition. For example, different categories of Master's degrees coexist: the "technical", "scientific/research" and "professional" Master's degrees. This emerging confusion is mainly due to the massification of Master's studies, which reflects the essential and basic element of the Knowledge Society, namely more and more educated people.

Meeting in Lisbon in 2000 and in Barcelona in 2002, the European Council set the European Union the ambitious goals "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable growth with more and better jobs and greater social cohesion" and to increase investment in research and innovation to 3 percent of GDP by 2010. In this context, it is essential to consider how the structure, implementation and quality of doctoral programmes could be improved in order to meet the goal of the Lisbon and Bologna Processes, and the needs of the European and global labour market. Research universities naturally have a major role to play in this regard.

The ENQA Workshop on Quality Assurance and Postgraduate education looked at the implications of the Bologna Process on postgraduate education in Europe, and more particularly on university teaching and research. Since the Berlin ministerial meeting of September 2003, doctoral level has been included as the third cycle in the Bologna process after undergraduate and graduate levels. Doctoral education differs from the first and second cycles, as it is characterised by two components: education and research. Its history, organisation, mode of delivery and applied standards also vary from country to country. This diversity and specific nature of doctoral education constitute challenges for the evaluation of third cycle study programmes. The main questions that this report addresses are: how to assess and enhance quality in doctoral education? What are the advantages and challenges of evaluating/accrediting doctoral programmes?

These questions are even more crucial now, in an era of higher education massification and a growth of research students. Efforts need to be concentrated on the review of the objectives, modalities and content of postgraduate education. As shown in Chapter 2, quality assurance in doctoral education is a key priority for many European higher education institutions.

The main objective of the workshop was to shed more light on a number of essential problems related to the quality of master's and doctoral programmes, which led to answer questions such as:

- What becomes the concept of "postgraduate education" in the EHEA where Master's and doctoral programmes are "higher education" cycles and are meant to attract more and more students?
- When assessing the quality of master's and doctoral programmes, what is the definition and distinction between quality of education and quality of research?
- What are the differences and what should be the distinction – if any – between quality of scientific and professional master's programmes?
- How should higher education institutions adapt their mission(s) to the challenge of offering quality master's and/or doctoral programmes?

Chapter 1: Forces Shaping Postgraduate Education: Academic Credentials in a Global Context

Mary-Louise Kearney, Director of the UNESCO Forum for Higher Education, Research and Knowledge

1.1. Introduction: The Changing Nature of Postgraduate Education

The Brasov Workshop looked at postgraduate education in Europe based on the Bologna Process and its implications for university teaching and research throughout this region. The presentation made by the *UNESCO Forum on Higher Education, Research and Knowledge* took a wider perspective by discussing the forces which have shaped the Knowledge Society and the Knowledge Economy over the last two decades and situating academic credentials in relation to these. The mandate of the UNESCO Forum includes a foresight role, which involves charting current trends and issues related to knowledge systems – i.e. systems of higher education, research and innovation (known as HERI) – as these underpin national development agendas across all regions of the world. A stocktaking of trends affecting research universities and postgraduate education is thus within the Forum's purview.

Since massification has become the predominant feature of higher education, the need to review the objectives, modalities and content of postgraduate education has emerged as a new priority. Student numbers worldwide are estimated to rise to some 150 million by 2025 and to continue increasing thereafter. While this demand has been obvious in OECD countries (e.g. from 2.2% in the 1960s to 59% in 2002 in the USA), it is certainly not confined to these states. Strong population growth in Africa, Asia and Latin America and increased (though not total) enrolment in primary and secondary education has boosted demand at the tertiary level. Seminal reports from UNESCO (*Change and Development in Higher Education 1998*), the OECD (*Redefining Tertiary Education 1999*) and the World Bank (*Higher Education in Developing Countries: Peril and Promise 2000*) have all served to identify trends and suggest strategies for dealing with the reality of massification. These include more diversified provision by the tertiary education sector, the enhanced use of technology to address the challenges of access and a clear distinction between institutions offering training and research-based teaching. Universities are now ranked for their research capacities and reputation and the so-called "Super Research Universities" have become an elite category to which many universities aspire.

This transformation of the higher (or tertiary) education sector has naturally stimulated debate on the nature of academic credentials and has been accompanied by the greatly increased mobility and international character of the labour market itself. As a result, postgraduate education needs to be scrutinised for its benefits by both countries and students alike. The fundamental question of *Why should postgraduate education be pursued and supported?* might bring four relevant responses:

- *To renew the academic profession*
- *To assure the future of the research community*

- *To provide expertise for non-academic career paths*
- *To provide opportunities for lifelong learning.*

The variety of these options alone is a reason for reviewing the content of postgraduate qualifications and for assessing the specific competences acquired via these credentials.

1.2. The Importance of High Level Knowledge Today

THE KNOWLEDGE DIVIDEND

Countries with track records in sustained economic growth have invested heavily in three key areas:

- *intellectual capital (notably people with advanced academic qualifications)*
- *a robust Research and Development sector*
- *strong Communication and Information Technology (CIT) capacity.*

Over the past two decades, the sectors of research and knowledge production have undergone profound transformation to emerge as main motors of development in a globalised world. Knowledge systems involve many entities *inter alia*: higher education institutions, public laboratories, research centres and think tanks run by policy and civil society groups, industry and the private sector and the military complex. The transformation process has had particular impact on higher education, and notably on the university sector.

As a result, countries across all regions are facing increased demands to strengthen their capacities for research and knowledge production – hence, the demand for postgraduate education. This demand is rising despite the vast differences in the political, socio-economic and cultural of these national contexts which impact on their capacity to respond effectively. This demand has also given new importance to national knowledge-oriented institutions and often necessitates renewal of the systems and structures of higher education so that these countries can take their place in the Knowledge Society which is an ever changing and volatile global environment. In turn, this urgency to promote and reinforce research and higher education multiplies pressures on the funding, content and structures of knowledge systems. These challenges have become particularly overwhelming for middle and low income countries, thus increasing the risk of their further marginalisation if they cannot keep pace with demand.

PROMOTING KNOWLEDGE SYSTEMS FOR SOCIAL DEVELOPMENT

Knowledge generated by research is the base of sustainable social development. In this regard, three dimensions merit attention:

- *placing knowledge, including high-level scientific knowledge, at the service of development*
- *converting knowledge, in all its forms, into value via applications and assessment of impact*
- *sharing good practice to ensure widespread benefits.*

Despite trends towards greater global uniformity in many areas of society, there exists no single answer as to what constitutes the most appropriate structures, systems or policies for research, higher education or knowledge production. Because these

crucial processes take place in varying historical, social, economic, political and cultural contexts, their outcomes cannot be uniform. Perhaps research and higher education could be structured and evaluated in more effective ways which means that experimentation in this direction should be encouraged and the findings widely debated and shared at regional and global levels.

Social development embraces an array of complex aspects including political governance, economic growth, employment trends and income distribution, education levels, access to health care, rural and urban population patterns, energy and the use of natural resources, along with factors affecting the quality of life such as private consumption, life expectancy and access to communication technology. These and other indicators are traditionally used by global organisations such as the World Bank, the United Nations Development Programme (UNDP) and the OECD to measure progress (i.e. social and human development) in specific contexts. Poverty remains a reality in many parts of the world and can be found even inside high-income countries. While the war on poverty has brought significant improvements in certain contexts (East Asian economies being a relevant example), these often fluctuate according to global economic performance. Elsewhere, the problem remains dire, thus impeding human development which is sustained and productive. Until this battle is won, progress will remain the privilege of a minority of countries. Winning the battle will largely depend on equitable and affordable access to and the use of relevant knowledge.

From the perspective of social development, the ongoing serious inequalities regarding access to knowledge remain unresolved and have assumed new urgency. The Knowledge Divide (and thus the research gap) constitutes an issue to be remedied without delay. Recognising and promoting excellence so as to discover and access new frontiers of knowledge is a goal which should be possible for all countries whatever their level of economic development. These frontiers are often in the fields of science, technology and engineering, health care, agriculture and economics where solutions depend on highly educated and skilled people whose qualifications enable them to understand their local contexts. Increasingly, the renewal and enhanced relevance of postgraduate education need to be assessed in relation to this background.

RESEARCH AND HIGHER EDUCATION: THE KEY NEXUS

In many instances, the research function of academia remains a prime source of a country's knowledge base. The future of this function depends heavily on postgraduate education, the quality of which necessitates three factors: *the concentration of intellectual talent, solid resources including funding and favourable governance, both national and institutional.*

The research university is a hub which links to national policy and budget, its innovation system and its ability to link to wider knowledge communities at regional and international levels. Adequate investment in research presents major problems for governments striving to find resources both for the research sector and for post-secondary education. Universities wishing to be considered as "world-class" are usually aiming at research excellence and often with particular repute in science, technology and innovation (STI) domains. To achieve this status, many have resorted to large-scale private funding.

Challenges for research institutions are continuing to grow. Today, some 22 of the world's elite 25 research universities are located in one country, the USA. While

American higher education deserves full credit for the breadth and resourcing of this sector, this monopoly cannot be expected to meet global needs in terms of research. For this reason, support for research universities has become an important priority in OECD countries. The rise in the status of the Shanghai Jiao Tong and similar ranking systems also attests to this situation. Though often viewed as controversial, these and similar instruments attempt to propose criteria to assess the research function of academia and have a strong bias towards Science and Technology fields where measurement is relatively easy (e.g. numbers of high level faculty, of publications and of citations). An exception would be the Times QS World University Rankings whose indicators include peer review, graduate employability and teaching quality which are very difficult to quantify.

At the same time, middle and low-income countries are striving to keep pace with the knowledge stakes with varied results. Investment in research is increasing in emerging economies – Brazil, China, Singapore and South Africa being pertinent examples in this regard. Postgraduate education and training, notably in STI fields, have assumed new importance to underpin this policy approach. Recent initiatives in Nigerian and Pakistani higher education illustrate this trend. The necessary resources have been found by governments although they are still struggling to resolve the issues related to literacy and lower levels of education.

Yet, the overall situation of research universities – and, by extension, for postgraduate education – in certain middle and low income countries remains bleak. In addition to weak and outdated infrastructure and inadequate investment, these countries suffer the worst effects of the brain drain. For example, 50 percent of Colombia's PhD graduates in science are abroad and some 47 percent of Ghanaian doctors work in other countries. It can be argued that even the poorest nations require research capacity to progress and that support for the principle of a research university in these contexts is more urgent than ever before. However, reaching this goal and maintaining the quality and relevance of these essential institutions requires sustained national commitment and is likely to remain a major objective for international cooperation in the years ahead.

MAJOR CHALLENGES FOR RESEARCH AND POSTGRADUATE EDUCATION
As the first decade of the 21st century draws to a close, what are the main challenges facing postgraduate education, the research function and its environment? In response, issues of equity, quality, relevance, ownership and international networking are critical.

An ever growing number of nations of varying scale have decided to accord priority to developing their knowledge base, through higher education and research, and to commit the necessary resources to this goal. Success stories are becoming more common in all regions which is an encouraging sign. These are characterised by specific indicators:
- *innovative policies in higher education, research and STI*
- *the political will to improve and profile the necessary infrastructure including universities*
- *efforts to train, retain and attract highly skilled human capital*
- *increased levels of investment in research and in higher education.*

It is essential to chart these processes and to help promote their replication worldwide to render the global knowledge society a more level playing field. A sample is cited below:

Africa: Private Sector support to build CIT capacity

As an example of the private sector partnering with higher education, IBM's Academic Initiative provides free software to universities; its Makocka Minds project is a mentoring scheme to link its technology experts with 19 African universities in eight countries; IBM has helped launch Africa's first Cloud Computing Centre and the first High Performance on Demand Solutions Lab (HiPODs) at the African Innovation Centre in Johannesburg, South Africa.

Arab States

Qatar is the leading investor in research and higher education in this region as it dedicates 2.8 percent of its GNP to these areas.

Private universities offering postgraduate education have multiplied in this region to meet demand (e.g. Iraq 18, Jordan 13, Egypt 13, Saudi Arabia 9).

Asia

Australia: strong investment in Research and Development by both the public and private sectors has offered varied career paths for PhDs.

China: In 2003, 13,000 doctorates were earned by students (at home or abroad); 70 percent of these were in science and engineering.

Singapore: As part of national investment in intellectual capital, the number of research scientists and engineers with PhDs from 970 in 1990 to 4,063 in 2004.

Pakistan: The Science, Technology and Engineering Programme (STEP), operating with eight universities in Europe, North America and Asia, aims to produce 2,000 PhDs annually until 2020. STEP involves large-scale investment in postgraduate education and offers major salary and tax incentives for faculty.

Latin America Countries

Brazil, Mexico and Argentina produce 80 percent of all PhDs in Latin America, thus acting as the academic powerhouses of the region.

At the **Centre for Marine Science of the University of Trinidad and Tobago** (UTT), research degrees are organised in knowledge clusters (e.g. environment and health, marine governance, policy and law) which directly address the national development agenda.

Europe/North America

In 2001, Europe produced 40 percent more PhDs in science and engineering than the USA. By 2010, this ration will increase to 2:1.

1.3. International Strategies for Research Universities and Postgraduate Education

In general, top class institutions are committed to the following goals:

- **Long term investment in intellectual capital**
- **Emphasis on postgraduate education**
- **Targeted faculty and student mobility to secure and retain excellence**
- **Connecting key disciplines around global issues and their local implications**
- **Increased bilateral and multilateral research collaboration**
- **New alliances and networks to orient and support collaborative research (e.g. Universitas 21, the League of European Research Universities, the Association of Pacific Rim Universities)**
- **Academic reform and flexibility to strengthen international connectedness**
- **Reinforced CIT capacity to facilitate these strategies**

Conclusion: Towards Worldwide Equity in Postgraduate Education

Throughout this paper, two areas have been emphasised: firstly, the crucial role of research universities in building the Knowledge Society and secondly, the social engagement of these institutions in direct support of national and international development agendas by providing postgraduate education of quality and relevance. Research universities are perhaps the single strongest component of knowledge systems because they are intellectual powerhouses with critical social, economic and cultural impact, which is both national and international.

Depending on their location, research universities face different challenges at the present time:

- OECD countries are undergoing a generalised faculty crisis as some 20–33 percent of their faculty has approached retirement age. This situation offers research career openings both for newly qualified PhDs and for non-OECD academics. The evolution of the Bologna Process in Europe will certainly be affected by this reality.
- As universities in the poorest countries have long suffered from inadequate policies and investment, forward-looking strategies are now urgently needed to try to bridge the gap created with high income countries. However, given the unknown outcomes of the current global economic downturn, increased funding for these institutions and to postgraduate education will surely face stiff competition from other areas. This may force a crisis whereby the clear benefits of context-relevant research   move centre stage to justify why investment in knowledge cannot be neglected.

Certainly, knowledge systems will continue to evolve and become increasingly sophisticated. Another likelihood is that, in a turbulent world climate, opportunities to advance and benefit from the knowledge dividend will not be easily accessible to all countries. Nevertheless, equity demands that no state should be excluded in this regard and this must remain the prime policy objective for governments everywhere. Otherwise, to paraphrase H.G. Wells, the risk that *"Human history will become more and more a race between education and catastrophe"* may become a reality.

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Chapter 2: Master and Doctoral Education in Europe: Key Challenges for Quality Assurance[2]

Dr. Alexandra Bitusikova, European University Association – Council for Doctoral Education

Improving the quality of European higher education has been an overall objective of the intergovernmental Bologna Process from its beginning in 1999. Simultaneously with the Bologna reforms, the European Commission launched several initiatives that had an impact on the further direction of the higher education sector: the modernisation agenda stressing more autonomy for universities, but at the same time also more accountability; and the Lisbon objectives emphasising the need to offer better job opportunities and rewarding careers for young researchers.

Following the Communiqués of the biannual meetings of ministers responsible for higher education in the Bologna signatory countries, we can see that the importance of quality has been rising in recent years. The first Communiqué of 1999 identified two main cycles: undergraduate (Bachelor) and graduate (Master) levels, and only briefly mentioned quality. The Berlin Communiqué (2003) included the doctoral level as the third cycle and recognised the role of higher education institutions (HEIs) in promoting quality. Since then, the European University Association (EUA) has been paying permanent attention both to doctoral education and to quality culture through a number of projects and surveys. EUA observes the trends in doctoral education, and supports the sharing of good practice among European HEIs.

The results of numerous discussions on the development of doctoral education demonstrate that the third cycle differs significantly from the first and second cycles, but at the same time it cannot be seen separately. In particular, the second cycle has serious consequences on doctoral education. According to the Dublin Descriptors (2004), education at the Master's level "provides a basis or opportunity for originality in developing or applying ideas often in a research context" and demonstrates "problem solving abilities [applied] in new or unfamiliar environments within a broader (or multidisciplinary) contexts". Thus, a Master's degree is supposed to contain research elements and as such is the right route for the third cycle. Indeed, in most European countries Master's degree is the main entry point for doctoral education. However, the Master level is not yet stabilised across Europe and varies from country to country. It is often sandwiched between the Bachelor and the doctorate, not well understood and not yet up and running everywhere. It is not easily readable as it offers plethora of titles, shows problems with ISCED classifications (The International Standard Classification of Education) and sectoral qualifications, and serves multiple purposes. We can identify three main types of Master:

- Master with taught courses with clear professional orientation
- Research intensive Master
- Master with various courses for returning learners.

The research content of Master programmes differs from country to country, from university to university, and even from programme to programme. In most countries, Master studies lead to a comprehensive scholarly thesis, but it is not the case everywhere. With the growing mobility of students, internationalisation of studies and establishing of joint Master and doctoral programmes there is a concern that the different quality of Master programmes (especially the different level of research elements in Master programmes) has an impact on doctoral education. Indeed, graduates with different Masters do not have the same starting point for research training.

Doctoral education is often described as a bridge between research and education, between the European Research and European Higher Education Areas. Universities have the main responsibility in providing training in and through research. The third cycle has specific features that differentiate it from the two other cycles. The main difference lies in the main component of the third cycle, which is original research performed by each doctoral candidate in a unique way. That is why doctoral education cannot be seen and evaluated in the same way as Bachelor and Master studies. Doctoral training is heavily dependent on the « one-to-one » relationship between the doctoral candidate and the supervisor (despite the new models of multiple supervisions). This special nature of doctoral training makes the evaluation even more challenging. How can anyone measure, evaluate or guarantee the quality of the human relationship?

Evaluations are also challenged by the large diversity in organisation of doctoral education across European countries, but also within countries and universities. Recent developments show an increasing trend towards more structured doctoral programmes and the establishment of doctoral/graduate/ or research schools. Traditional individual study programmes based on a model of a working alliance between the doctoral candidate and the supervisor without a structured coursework phase are being increasingly seen as being inappropriate in preparing young researchers for multiple careers in different sectors, although they still prevail in social sciences and humanities. According to EUA surveys, about 30 percent of European HEIs have introduced a new model of doctoral/graduate/research schools. These schools differ significantly from one another; their institutional embeddedness and structures are often incomparable and they carry different names and labels, which can lead to confusion or misunderstanding among outsiders. In most countries and institutions, however, a mixture of different models (i.e. both individual and structured study programmes and schools) is the common organisational feature. It only proves that HEIs may have one goal – to improve and sustain the quality of doctoral education – which can be achieved through different flexible routes tailored for and by each institution.

Specificity in nature and diversity in organisation of doctoral education makes evaluations – either internal or external – highly complex. An evaluation includes two main and rather different aspects: the quality of doctoral training (educational part) and the quality of research (including the quality of the research environment, the supervisor and the research team, research outcomes, international reputation, etc.).

It is important that each university decides on its own quality standards of doctoral education to be linked to its mission, functions and goals rather than following only external standards, quantitative methods and checklists that do not take into account the diversity of organisational models and profiles.

Higher education institutions across Europe try to implement various aspects of internal quality assurance by:

- introducing internal regulations and codes of practice in doctoral education as well as agreements signed between the doctoral candidate, the supervisor and the institution;
- improving standards of access, recruitment and selection ;
- offering flexible and optional transferable skills training that fits each candidate's career needs ;
- introducing new supervision models and providing professional development for supervisors ;
- regular monitoring of each doctoral candidate's progress ;
- supporting internationalisation and mobility;
- ensuring high standards of the process of the thesis defence;
- following TTD (time to degree) and completion rates
- taking into account different funding schemes
- tracking of doctoral graduates
- and others…

The problem is that all these aspects are not always understood and covered under the umbrella of « quality assurance » at universities, but are followed as separate issues. All HEIs try to identify and implement different internal quality indicators. Some focus more on improving access, recruitment and selection procedures while some others try to enhance the quality of supervision or follow the completion rates. It seems that quality assurance, including all its aspects, is easier to achieve and monitor if doctoral education is structured, for example through a doctoral/graduate/research school. It does not mean that a doctoral school is the best or the only way to organise doctoral education, but its structure helps to monitor the procedures and the process of doctoral studies and thus, to have a major impact on their quality.

The survey of the EUA Council for Doctoral Education (EUA-CDE) showed in 2008[3] that the topic of quality assurance in doctoral education is on the top of the priority list of many European HEIs. Following this result, EUA-CDE will organise thematic events related to quality of European doctoral education. These events will address the question of how to achieve public accountability and to strengthen partnerships with other institutions through quality assurance procedures that improve the system as a whole. At the same time, it is important to continue the dialogue between different stakeholders in order to clarify the needs of each stakeholder, to identify and differentiate internal and external quality assurance procedures, and to increase trust and confidence among all actors in the process.

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3   Results of the questionnaire from the launch conference of the EUA Council for Doctoral Education, Lausanne, Switzerland, 2008.

Chapter 3: Quality Assurance at Doctoral Level: the case of England, UK

Janet Bohrer, Development Officer, Quality Assurance Agency for Higher Education, UK

3.1 Introduction

The Quality Assurance Agency for Higher Education in the UK (QAA[4]) is responsible for safeguarding the public interest in sound academic standards of higher education qualifications (taught and research). It also informs and encourages continuous improvement in the management of the quality of higher education. The doctorate has been documented as the 'pinnacle' of academic degrees a university can award (Park 2007). It is also a Bologna Declaration third cycle award[5]. In the UK the quality assurance responsibilities fall within the remit of the QAA.

Postgraduate research education is organised and delivered differently around the world. Some common understanding about what the doctoral award signifies can be derived from the shared 'Dublin' descriptors for the Bachelor's, Master's and Doctoral awards (2004)[6]. However, there are areas where there are differences between national experiences, for example the relationship between national research and postgraduate research education (Powell and Green 2007). It is by sharing our own experiences we can help to develop our understanding more broadly. This article therefore contributes to the debate about quality assurance at doctoral level by outlining the case of the UK and in particular of England.

3.2 The UK Doctorate

The QAA's Framework for Higher Education qualifications for England, Wales and Northern Ireland (FHEQ)[7] states that doctoral degrees are awarded to students who have demonstrated:

- 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
- 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
- The general ability to conceptualise 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
- A detailed understanding of applicable techniques for research and advanced academic enquiry.

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4   An introduction QAA www.qaa.ac.uk/aboutus/IntroQAAMay09.pdf May 2009
5   The Salzburg principles 2005 www.eua.be/eua/jsp/en/upload/Salzburg_Report_final.1129817011146.pdf The focus from two main cycles of higher education to include the doctoral level at the third cycle and to build links between the European Higher Education Area and the European Research Area was adopted as part of the Berlin communiqué (2003)
6   Shared 'Dublin' Descriptors for the Bachelor's, Master's and Doctoral awards (2004)
    www.tempus.ac.yu/here/tl_files/Dokumenti/Dublinski%20deskriptori.pdf
7   The Framework for Higher Education Qualifications in England Wales and Northern Ireland (FHEQ)
    www.qaa.ac.uk/academicinfrastructure/FHEQ/default.asp

The most common research degree in the UK is the Doctor of Philosophy (PhD or DPhil) but UK higher education providers also offer a wide range of other doctorates for example professional doctorates, PhD by practice, Integrated or 'New Route' doctorates and PhD by publication (Park 2007; Clarke and Powell 2008).

In 2005/06 there were 94,180 doctoral researchers in the UK[8] inclusive of those studying both full and part time, registered in over 120 institutions. The UK doctoral cohort is complex and diverse. Entry and completion data is published by the Higher Education Funding Council for England (HEFCE)[9].

3.3 A Changing Context

Towards the end of the last century the UK saw a massive increase in numbers of students. The proportionate growth of postgraduate students was much faster than that of undergraduates. Importantly in terms of the quality assurance agenda a review of postgraduate education under the chairmanship of Professor Martin Harris took place in 1996[10]. The previous major national investigation of postgraduate education had been many years before and part of the Higher Education inquiry chaired by Lord Robbins (1961–63)[11].

The 1996 review was pivotal for the quality assurance of postgraduate research programmes because it resulted in the first publication of its kind in the UK namely *Guidelines on the Quality Assurance of Research Degrees* (HEQC1996). These guidelines formed the basis from which the *Code of Practice section 1: postgraduate research programmes*[12] was developed and its revised version published in 2004. Importantly between the publication of the first version and the second there were a number of reports that were influencing the development of postgraduate research programmes nationally. The *Roberts Review of the supply of people with science, technology, engineering and mathematics skills in the UK : SET for success report* (April 2002) and *Improving Standards in Postgraduate Degree Programmes (HEFCE 03/23)* drew on existing practice across the UK in developing and publishing threshold standards for research degree programmes. An annex to the *Improving Standards* report included a joint statement from the research councils and the Arts and Humanities Research Board *Skills training requirements for research students*. The UK landscape in which the doctorate existed was changing. Consultation with the higher education sector at this time made it clear that a single point of reference for good practice in the provision of postgraduate research degrees would be welcomed. That single source of reference is the revised section of the *Code of practice* published in 2004.

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8   Artess, J et al,Higher Degrees: Postgraduate Study in the UK 2000/01 to 2005/06, 2008 table 1.11a pg 18
     www.hecsu.ac.uk/hecsu.rd/documents/Reports/DIUS-RR-08-16.pdf
9   The Higher Education Funding Council for England publish data about PhD research degrees entry and completion
     www.hefce.ac.uk/pubs/hefce/2007/07_28/   and PhD study: trends and profiles 1996–97 to 2004–05
     www.hefce.ac.uk/pubs/hefce/2009/09_04/
10 Higher Education Funding Council for England Committee of Vice-Chancellors and Principals Standing Conference of Principals:
     Review of Postgraduate Education May 1996 Reference M 14/96 www.hefce.ac.uk/pubs/hefce/1996/m14_96.htm#foreword
11 Higher Education Inquiry the 'Robbins Report' 1961–63 pre publication letter to the Cabinet about the recommendations from
     the Inquiry http://filestore.nationalarchives.gov.uk/pdfs/small/cab-129-114-c-173.pdf
12 Code of Practice section 1: postgraduate research programmes
     www.qaa.ac.uk/academicinfrastructure/codeOfPractice/default.asp

3.4 The Code of practice section 1: postgraduate research programmes

The *Code of practice* was developed by QAA and a working group comprising of higher education experts including postgraduate research students. It contains twenty seven precepts each with explanatory text. It was published after rigorous consultation within the higher education sector enshrining the spirit of the HEFCE 'threshold standards' (as above). The joint statement by the research councils of the skills training requirements for research students is included as an additional appendix to the section of the Code.

The precepts are grouped under the following headings:

- Institutional arrangements
- The research environment
- Selection, admission and induction of students
- Supervision
- Progress and review arrangements
- Development of research and other skills
- Feedback mechanisms
- Assessment
- Student representations
- Complaints
- Appeals

In the two years following publication of this section of the *Code of practice* QAA conducted a special review designed to ensure that all higher education providers in England, Wales and Northern Ireland in receipt of public funding had '*policies and procedures that were robust and effective for securing and enhancing the quality and standards of research degree programmes*' (HEFCE 18/2004). The special review of research degree programmes (2005–06) was a one-off exercise intended as a means to gauge the extent to which policies and procedures of higher education providers were in alignment with this section of the Code.

The report on the review of research degree programmes England and Northern Ireland[13] concluded that institutions showed a good level of engagement with the Code in a "*thoughtful manner, with appropriate reference to the institutional environment and student diversity.*" (Review of postgraduate research degree programmes in England and Northern Ireland pg 22) It was considered that the preparation for the process of review was useful to institutions in helping them understand and improve their strengths and weakness of particular areas covered by the *Code of practice* as outline above. The review report recorded that there was evidence of good practice relating to all the precepts. This was particularly notable with respect to the '*clear and comprehensive information provided for research students, either through institutional codes or other media; and the arrangements for monitoring and reviewing research degrees*'. The review also highlighted areas where institutions were finding it challenging to respond to the principles in the Code. These included providing developmental opportunities for established supervisors and in implementing more detailed assessment criteria.

The special review helped to raise awareness with staff and students about the quality assurance of postgraduate research programmes. It also provided a means by which to share experience and examples of effective practice both within an institution

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13 There were separate overview reports for England and Northern Ireland www.qaa.ac.uk/reviews/postgraduate/ and for Wales www.qaa.ac.uk/reviews/postgraduate/wales.asp

and more widely across the higher education sector. Following the special review in England, Northern Ireland and Wales, further evaluation of postgraduate research programmes is included as part of the general cycle of quality assurance evaluation (see next section).

3.5 Quality Assurance

The UK's approach to quality assurance and enhancement has been developed within an environment of devolved country responsibilities. Consequently while many of the external reference points available to higher education providers, such as the *Code of practice*, are UK wide, the process of evaluation varies. In England, for example, institutional audit forms part of the Quality Assurance framework (2002) and is detailed in the *Handbook for institutional audit: England and Northern Ireland 2006*. The separate arrangements for reviewing institutions in Scotland and in Wales are described in the respective handbooks[14].

For postgraduate research programmes using England as an example, institutional audit teams like in the special review outlined above are required to assess and report the extent to which

> "*institutional arrangements for securing the academic standards of awards and the quality of provision in postgraduate research degree programmes are in alignment with the guidance given in the Code of practice, section 1: postgraduate research programmes.*" (Handbook for institutional audit: England and Northern Ireland pg 15 2006)

Audit teams have access to the individual institutional (unpublished) reports from the special review and institutions are invited to update the team on developments since that report was produced. Audit teams make a formal comment on postgraduate research programmes which contributes to the overall confidence judgement made about an institution. All institutional audit reports are published.

Following the special review there was some concern voiced that the emphasis on research degree provision might be achieved at the expense of attention to taught programmes. This was never the intention and has not been demonstrated to be the case. However, as auditor comment about postgraduate research provision is now embedded within the overall institutional audit it has become easier for the principles of effective pedagogy and assessment from across the higher education system to be applied to the distinctive area research degree study (Clarke and Powell 2009 pg 21)

In the UK all higher education providers are autonomous. Universities are not owned by the state but most higher education providers receive government funding distributed by the higher education funding councils and the Department for Employment and Learning in Northern Ireland. Institutions are therefore accountable to the State through mechanisms which include those outlined above but individual institutions are responsible for the standards of the awards they make and the quality of the education they provide. Higher education providers therefore all have their own internal quality assurance procedures.

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14 Handbook for enhancement-led institutional review: Scotland www.qaa.ac.uk/reviews/ELIR/default.asp and Handbook for institutional review: Wales www.qaa.ac.uk/reviews/reviewWales/default.asp

In the overview report published after the special review many of these sector wide internal practices were detailed. In 2008 QAA added to this information by publishing responses to a discussion paper about doctoral programmes (Clarke 2008)

The experience of those studying at doctoral level is assessed through the work of the Higher Education Academy (HEA) annual Postgraduate Research Experience Survey (PRES)[15]. A section of the questionnaire relates to the QAA *Code of practice, section 1: postgraduate research* programmes and the Research Councils' skills training requirements[16]. The overview reports are published. In the latest report (2007) career and personal development planning appears to be an aspect of the postgraduate research experience which is poorly addressed. The arrangements for progression and review are the most positively rated.

3.6 Challenges

The doctorate has a long history with its roots in medieval Europe. Originally it was a licence to teach in universities which was developed into a research degree in Germany in the 1800s, redefined in the US during the 1860s and first introduced to the UK in 1917 by the University of Oxford (Park 2007). Park (2007 pg 2–3) goes on to suggest that there are three main sets of factors which are driving changes to the nature of the UK doctorate: sustaining the supply chain of researchers; preparation for employment; and internationalisation. In the UK a number of different types of postgraduate research degree programmes have been developed. All are located at doctoral level (FHEQ level eight) but are different awards (for example PhD, DPhil, professional doctorates, PhD by practice, PhD by publication). Such diversity has created some confusion with regard to the purpose of the doctorate both between types of awards and of similar awards but between subjects. It is therefore timely to ask ourselves 'what is a doctorate'? Beyond aligning with framework descriptions what are, if any, the common criteria or essential elements that underpin all doctorates regardless of the subject or type of programme studied? For example '*Publishability' remains an important criterion, supported by different definitions of 'originality'* (Clarke 2008) does this underpin all doctoral awards? As the higher education landscape evolves the challenge for us in the UK is to debate what if any are the underlying notions of 'doctorateness'? This is important for the continual quality assurance for postgraduate research education.

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15 The Postgraduate Research Experience Survey www.heacademy.ac.uk/ourwork/research/surveys/pres
16 The Research Councils' skills training requirements and the skills agenda for early career researchers are supported through Vitae www.vitae.ac.uk

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Chapter 4: Quality Assurance from the doctoral candidates' and junior researchers' perspective

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Abstract
The aim of this article is to present the experience of doctoral candidates and junior researchers with standardisation of procedures and processes in doctoral education and thereby illustrate the key factors in ensuring quality. However, these key factors are making the process of quality assurance in doctoral education difficult, because a standardisation at doctoral level is even more demanding than at bachelor and master levels.

4.1 Introduction

Standardisation of procedures and processes in doctoral education is coming from the standardisation process of Bachelor's and Master's programmes, which is still ongoing on European and national levels. Because the nomenclature and learning outcomes are still differing a lot throughout Europe, European nations are striving to implement standards in doctoral education on the European level. However, doctoral education is different from first and second cycle education. As the doctorate also is the first step of a researcher's career, self-learning has to be taken into account on various stages.

Doctoral education in itself can be described as institution-specific, tightly connected with research ongoing at research institutions and influenced by the research approach, specialisation and focus of each discipline. When talking about research work, original ideas and creative work, the question raises how (and if) quality in doctoral education can be assessed and developed at all. One of the frequently used concepts of comparison between bachelor's and master's studies is for example the workload measured in credits combined with the learning outcomes. However, the use of European Credit Transfer System (ECTS) is not appropriate for doctoral education: "*The proper assessment for the result of the doctoral process is the quality of the research work as evaluated by peer review, not the performance in coursework. The ECTS is not an appropriate measure for the scale and complexity of core research work (though it is applicable to transversal skills components).*" (EURODOC 2005).

Hence, after illuminating the background of doctoral education and its quality approach, the key factors in quality of doctoral programmes – especially on the different levels of the institution – will be explained.

4.2 Setting the stage – quality and doctoral education

Quality has to live up to the requirements and expectations of the various stakeholders of an organisation. These can be customers, staff, society at large, etc.

Concerning doctoral education, the stakeholders are mainly:
- doctoral candidates;
- supervisors;

- staff (scientific, administrative);
- partner institutions and partners from industry;
- lecturers;
- Ministries and other financing institutions;
- society at large.

Talking about quality assurance from the doctoral candidates' and junior researchers' perspective means talking about the requirements that the doctoral candidates as stakeholders have to the programmes, studies, graduate schools and institutions offering such programmes, according to the model, offer (full-time, part-time, modular, structured, etc.), content, participants, etc.

Quality assurance is about checking certain standards. However, who is setting the standards and how can the performance be measured? Going back to the Bachelor's and Master's level, quality is assured by different methods, e.g.:

- programmes are accredited, which sets the seal on the processes used in the programmes;
- programmes are self-evaluated through feedback requests on services offered by the administration and on the teaching quality and other specified criteria of the lectures;
- lecturers are asked for feedback on services offered by the administration as well as on the programme and classroom;
- career progress of alumni is evaluated after fixed periods.

However, the quality assurance standards used differ according to institutional concepts and set of objectives. The institutional quality strategy will set goals for each layer of the institution. Looking at these different layers and the programmes offered, certain sets of criteria are needed to achieve these goals.

Factors in Quality Assurance of Doctoral Education

Original & excellent research

Access & transparency

Equality of access

Mobility & internationalisation

Administrative structure

HIGHER EDUCATION INSTITUTION
CAREER DEVELOPMENT & STRUCTURES
Offered structures and programmes
Perception of career perspectives
Cooperation with external partners (Industry, NGOs etc.)

GRADUATE/DOCTORAL/RESEARCH SCHOOL
Organisational objectives
Attractive employment & working conditions
Standardised recruitment procedures
Supervision, training for supervision & supervise the supervisors

PROGRAMME LEVEL
Objectives of the programme
Enhancing training, skills & experience of researchers
Added value of a doctorate
Assessment, expectations & outcomes of doctoral programmes
Duration of the doctorate

OUTLOOK
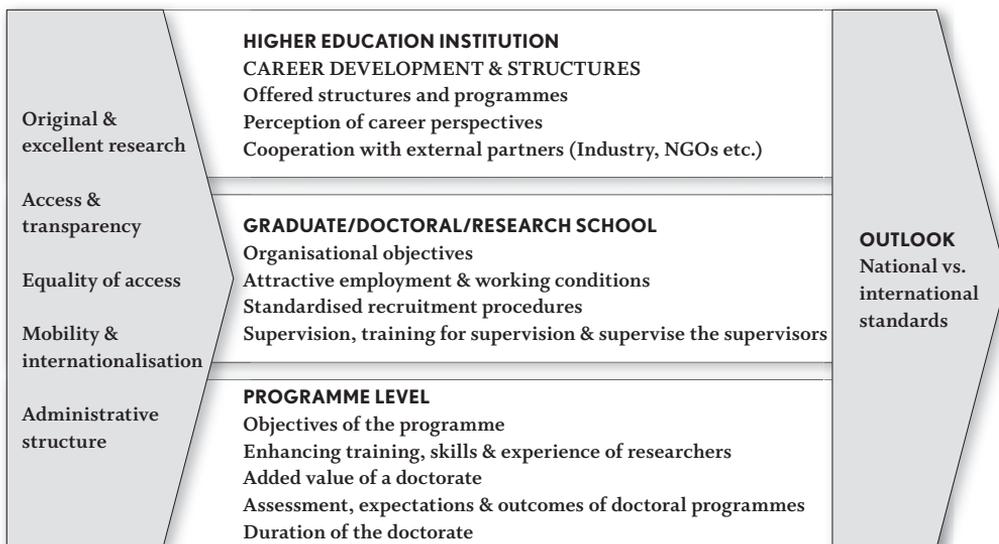National vs. international standards

Figure 1. Factors in Quality Assurance of Doctoral Education

The standards and goals for doctoral education that have been set at European level have to be incorporated first in institutional strategies. Documents issued by the European Commission like the Charta & Code (EUROPEAN COMMISSION, 2005) help to familiarise national institutions with the goals that have been set. In fact, before an evaluation of these standards can take place at institutional level, the higher education institutions (HEI) have to implement these standards at least partially and thereby appropriate them as their own. Once these standards are implemented at institutional level, they are applied to the lower institutional layers – the department, graduate school, doctoral programme. Hence, what does quality assurance of doctoral education on these different layers mean from a doctoral candidate's perspective? Figure 1 shows how objectives set at European level can be used as sub-goals or criteria on the different levels of the HEI. These "key factors" will be described in the next section.

4.3 Key factors in quality assurance of doctoral education from Eurodoc's perspective

At European level, documents like the Charta & Code (EUROPEAN COMMISSION, 2005) have been devised to develop standards in doctoral education for young researchers within Europe. The primary component of doctoral education is research: "*The core component of doctoral training is the advancement of new knowledge through original research. It is essentially 'training by, not training for research'. Research Doctorates should be clearly discerned from other types of postgraduate education.*" (EURODOC 2005)

Quality assurance of research is a question that cannot be addressed easily as research is a creative process and should be free. Therefore, assessing research cannot be done with the aim of assuring standardised processes in doctoral education. Examples like evaluating the amount or content of research done, or even the quality of a single paper or a doctoral thesis, which can only be evaluated by experts in the field, show that assuring quality in doctoral education is much more time consuming and can be much more costly than at bachelor's and master's level. Taking up on the citation from a Eurodoc declaration from 2005: "…*advancement of new knowledge through original research…*" (EURODOC 2005) is much more than only monitoring the outcomes of a single doctoral programme, the duration of the doctorate, etc. This "advancement through original research" is about the quality of research and even about the philosophy of the transfer of knowledge and learning at the HEI.

From a EURODOC perspective, figure 1 shows an attempt to break down the general objectives of doctoral education – also laid down in the Charta & Code (EUROPEAN COMMISSION, 2005) – to the different levels of a HEI. The implementation of the "factors" as quality assurance factors can only take place through setting clear goals or evaluating certain sets of criteria. This article will only present the factors and will not transform them into criteria that can be evaluated.

4.3.1 GENERAL FACTORS

The general objectives/factors (first column of figure 1) can be used for overall standardisation of all layers and thus provide an outlook on the international vs. national standards. The general factors are:

1. Clear rules on access to doctoral education and a transparent recruitment process;
2. Procedures ensuring equal access for all, independently of gender, ethic or social background, disadvantages and status;
3. Foster internationalisation by increasing mobility through offering portable grants, social security and mobility of pensions;
4. A transparent administrative structure of the HEI in which the administration of doctoral education finds its place and thereby can offer services and assist young researchers.

4.3.2 FACTORS AT HEI LEVEL

At HEI level, career development and structures, and offered programmes are important factors, as well as the researchers' awareness about the career opportunities after they graduate.

Cooperation with external partners (Industry, NGOs, etc.) should be developed to guarantee the employability of doctoral candidates on the one hand, and to work on applied fields and not only on fundamental research on the other hand.

4.3.3 FACTORS AT GRADUATE/DOCTORAL/RESEARCH SCHOOL LEVEL

When it comes to the level of the Graduate/Doctoral/Research School, one can divide the objectives into organisational objectives and framework conditions (i.e. employment & working conditions, recruitment procedures, supervision, training for supervision, coaching for supervisors).

The organisational objectives are related to the integration of the graduate school into the HEI, and the transfer of the HEI strategy into objectives and structures in the administration, which should build a supportive service culture based on doctoral candidates' needs.

Concerning the framework conditions, the recruitment procedures are important. They should allow equal access for all to the graduate school, and be transparent and connected with the institutional strategy on access. Then, supervision and training of supervisors are other important factors. Here, supervision agreements can be seen as a valuable tool usable for setting standards. In this respect, such agreements should include skills development, responsibilities of the Research Fellow and Principal Investigator (PI) and a timeline for the doctorate. Reviewing supervision, thus considering supervision as a recognised task for the staff, promoting human resource development, creating workload models for supervisors, and evaluating supervisors dedicated time are possible ways to quality assure supervision.

4.3.4 FACTORS AT PROGRAMME LEVEL

As the programme level is most distant from the top level (i.e. the HEI level), the interconnection of programme level objectives with the strategy of the HEI has to be assured. The question here is: how can researchers' enhancement of skills and experience, the added value and duration of a doctorate, the assessment, expectations and outcomes of doctoral programmes be evaluated? After setting the right criteria, the process of evaluation should lead to improvements at programme level and should give feedback about the upper levels, if the quality of processes at these levels needs to be improved.

Conclusion

Finally, if a doctoral programme is connected with the overall strategy on doctoral education of an HEI and if an HEI integrates the objectives laid down in the Charta & Code (EUROPEAN COMMISSION, 2005), the objectives/factors should be clear, consistent and focussed on the whole institution. Research quality can be seen as a priority, but should be obtained through an assessment of commensurable procedures and criteria on each layer of the institution. Such assessment would enable the implementation of improvement procedures that would continuously develop the quality of HEIs, research, administration and doctorates.

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Chapter 5: The Postgraduate Students Mirror 2008, a survey in Sweden

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The postgraduate students mirror 2008 is a survey answered by 10,175 randomly selected doctoral students, with at least one year's experience of doctoral studies. These students were enrolled at higher education institutions in Sweden that offer third cycle (doctoral) programmes. They represented about 75 percent of the whole target population.

5.1 Purpose of the survey

The conditions in which doctoral students conduct their studies and the way in which these are organised have a major impact on their quality. Gathering information from those directly concerned is one way of highlighting the issue of quality. The purpose of the survey was to highlight the quality of doctoral studies from the perspective of doctoral students and compare the results with those of a previous survey conducted in 2003.

5.2 Doctoral students

There is an equal number of men and women enrolled in doctoral studies programmes. The average age of doctoral students is thirty-three. About 50 percent of doctoral students can be found in Medicine and Technological Sciences and 33 percent in the Social Sciences and Natural Sciences. The most common type of doctoral thesis is a compilation thesis and 80 percent of these are written in English.

Postgraduate students in the study. Percentage by subject area.

Social sciences, 16%
Law, 1%
Humanities and Theology, 10%
Others, 3%
Veterinary medicine, <0,5%
Pharmaceutics, 1%

Mathematics, 2%
Natural science, 15%
Technology, 23%
Agricultural sciences, 1%
Medicine, 26%
Odontology, 1%
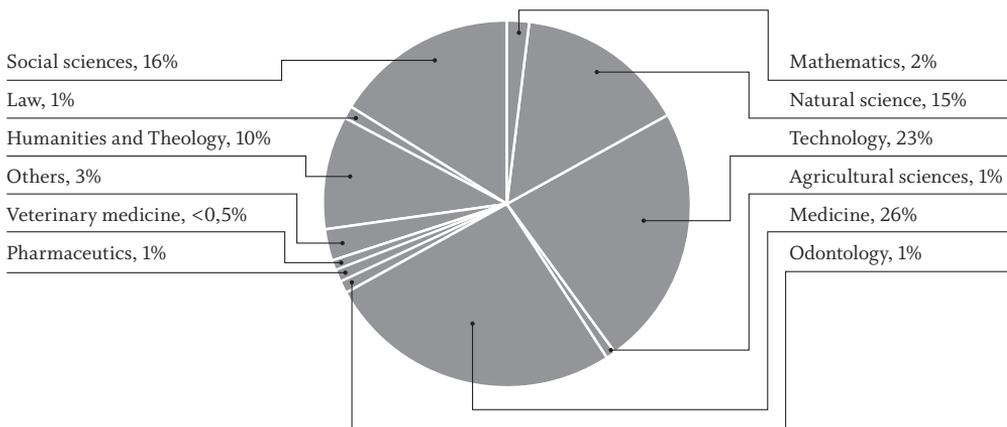
Overall assessment

By and large the doctoral students rate their programmes highly. Eighty percent of doctoral students stated that their programme was 'good' or 'very good', but there are a number of critical responses to how the programmes function.

5.3 Result of the survey

The questionnaire contained 100 questions and 66 percent of the doctoral students responded to the survey. The survey also offered a questionnaire in English for foreign students.

The results are based on a statistical analysis of the responses to the questionnaire using exploratory factorial analysis. This analysis has yielded seven different dimensions that encapsulate the issues raised by the survey.

These dimensions are the following:
1. Introduction to postgraduate studies;
2. Professional development;
3. Dialogue with supervisors;
4. Supervision in action;
5. Taught courses;
6. Reflection and values;
7. Study environment.

5.3.1 INTRODUCTION TO POSTGRADUATE STUDIES

A satisfactory and sound introduction to postgraduate studies can provide many benefits in terms of study techniques and from a social perspective. A good introduction can also enable the students to become part of the organisation more rapidly and get on with their studies and other duties. Knowing that they are doing the right thing at the right time provides a more secure environment and makes it possible for them to avoid potential problems. Social introductions mean that postgraduate students feel welcome and find it easier to take their place in their environment.

Introductions are also important for the departments. A postgraduate student who feels welcome and who knows the department's activities is an asset and an affirmation that the recruitment was successful.
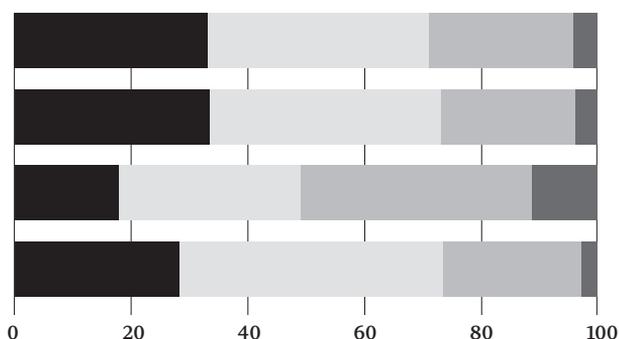
Introduction to postgraduate Studies

Despite some improvement since the previous survey in 2003, the induction to doctoral studies still does not work satisfactorily. As many as 70 percent are dissatisfied with their departmental introductions for newly-enrolled students, information on the rights and obligations of doctoral students and advance information on the programme. Fewer women than men are satisfied with their induction.

- The results in each dimension have also been transformed to a standardised scale (see Appendix). In this figure, it is possible to compare different subject fields and see the changes over time.

The explicit criticism of the introductions offered by the institutions should be noted and taken seriously. In view of the shortage of time that many students experience, it is particularly important, for instance, to get them started on their studies without delay. This could be made easier by offering them a better introduction to their programmes.

5.3.2 PROFESSIONAL DEVELOPMENT

This dimension relates to the professional content of a career in research. Knowledge about scientific methodology and scientific theories constitutes the core of postgraduate study and is a necessary requirement for independent research. Awareness of research ethics is regarded as a quality issue both by the research community and elsewhere and the application of ethical standards is central to research.

Professional development
TO WHAT EXTENT HAVE YOUR DOCTORAL STUDIES INVOLVED

aquiring knowledge of scientific or scholarly methodology

acquiring knowledge of scientific theories

aquiring the ability to carry out your own research independently

aquiring deeper insights into research ethics

■ Very little/not at all　▫ Not very much　▪ A great deal　▪ To a very great extend
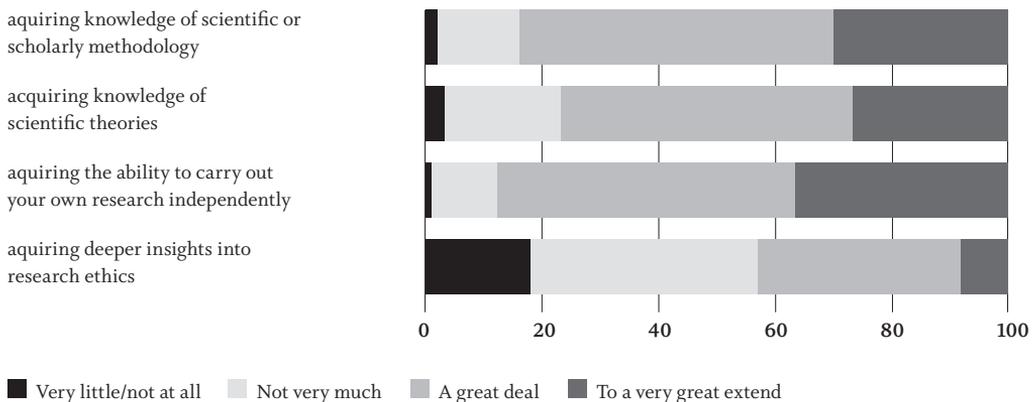
The responses about professional development are very similar to those of 2003. Doctoral students are able to conduct independent research, and to acquire skills in research theories and methods. However, some doctoral students feel they have not acquired the required skills in theory and methods even at the end of their programmes. More than half of the doctoral students state that they have acquired deeper insight into research ethics to a small degree/very small degree/not at all.

Research ethics deals with problems and issues related to the conduct of research. For instance, how far may one jeopardise the integrity and safety of other people

in order to attain the knowledge that is sought? Research ethics also involves the researcher's own rectitude and candour. There is justification for the inclusion of these quality aspects of research in postgraduate programmes.

It is important for doctoral students to understand the value of good research ethics, not least in their future careers. Lack of knowledge and the failure to apply ethical standards could in the long run impair the confidence of fellow-researchers, the general public and the commercial sector in the researchundertaken. It is disturbing that more than half of the postgraduate students do not consider that they have enhanced their awareness of research ethics.

5.3.3 DIALOGUE WITH SUPERVISORS

During their studies, postgraduate students are often highly dependent on their supervisors. Supervisor commitment to the student's progress and future career plans and supervision that takes the form of a dialogue provide support. The role of the supervisor varies from subject to subject and according to the individual student's needs. But all postgraduate students need someone who can offer guidance and help to create a good environment for their work and research.

Dialogue with supervisors

To what extent has your supervisor displayed interest in your post graduate studies

To what extent has your supervisor provided constructive criticism of your research

To what extent has your supervisor discussed methodological issues with you

To what extent has your supervisor discussed theory with you

To what extent has your supervisor discussed your plans for the future with you

To what extent have you had the opportunity to take part in general discussions about your subject area with your supervisors or other researchers

■ Very little/not at all   Not very much   A great deal   ■ To a very great extend

A complex picture is provided by the responses to questions about supervision. The majority of postgraduate students describe their supervision as satisfactory. But responses also reveal that a large proportion of postgraduate students report only limited interest from their supervisors in their studies, and the same applies to constructive criticism of their research activities or discussions of methodological or theoretical issues.

One of the cornerstones of higher education, constructive criticism, should for instance help students to make progress in their work. Support of this kind seems to

be lacking for about one-third of the postgraduate students. More than 40 percent of the students report that they do not get the support often provided by discussion of methodological and theoretical issues either. This situation can erode the quality of their theses and may possibly lead to a reduction of the efficiency of postgraduate programmes.

5.3.4 SUPERVISION IN ACTION

Shortcomings in their supervision may be the breaking point for some postgraduate students. To be effective, for instance, an adequate amount of supervision must be provided. Opinions about where the limit should be drawn can, of course, differ between postgraduate students and their supervisors. Frequent contacts are most intensive early in the programme when the thesis subject has to be chosen, studies planned and the student initiated into research procedures. Contacts intensify again towards the end of the programme, when the thesis has to be completed. There are no rules that lay down how much supervision a postgraduate student is entitled to.

Supervision in action
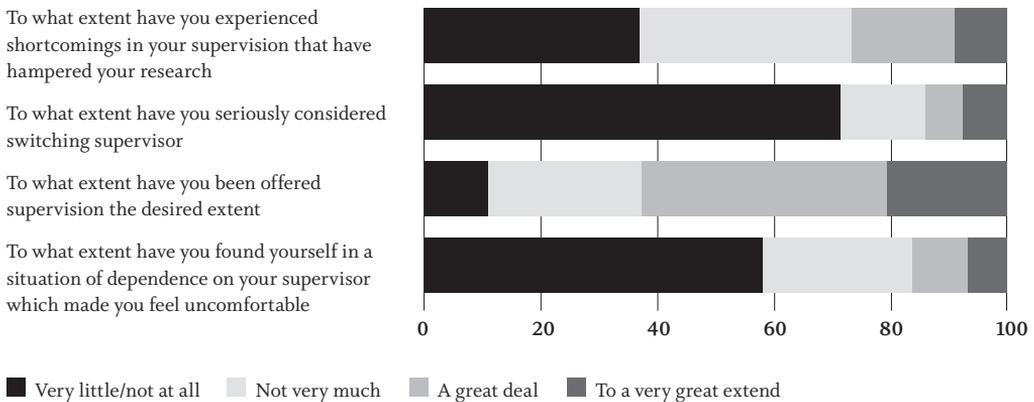
In *Supervision in action* the responses show that a very large proportion (40 percent) have not received supervision to the extent that they desired and that more than one in four students have felt that inadequate supervision has created obstacles for their research work. The fact that one out of every four postgraduate students has either switched supervisor or seriously considered doing so provides food for thought. Postgraduate students are in a situation in which they are dependent upon one or two supervisors and the closeness of these relationships adds to their vulnerability.

The pattern revealed is yet the most positive of the seven different dimensions. It is worth bearing in mind that, even though they constitute a minority, every fourth postgraduate student has experienced shortcomings in the supervision thus affecting the research results. This is probably not merely a question of the volume of supervision. However, the volume of supervision is an interesting area in itself. Are the major differences between subject areas justifiable? What is the optimal amount of supervision? What are the consequences of more or less than average supervision in postgraduate education?

5.3.5 RELEVANCE OF TAUGHT COURSES

Postgraduate programmes in Sweden consist of both taught courses and thesis work. The proportion of time allocated for courses and thesis work varies from subject field to subject field, and even within the same subject field in different higher education institutions. The aim of the taught courses in postgraduate programmes is both to provide students with more advanced expertise in their subject and also to give them sufficient specialised knowledge to enable completion of their thesis.

Relevance of taught courses

The courses offered fit in with my wishes and needs

The courses are relevant to the work I am doing my thesis

The quality of the courses is consistently high

The balance between the credit points for course work and my thesis is a good one

0   20   40   60   80   100

■ Very little/not at all　▪ Not very much　▪ A great deal　■ To a very great extend
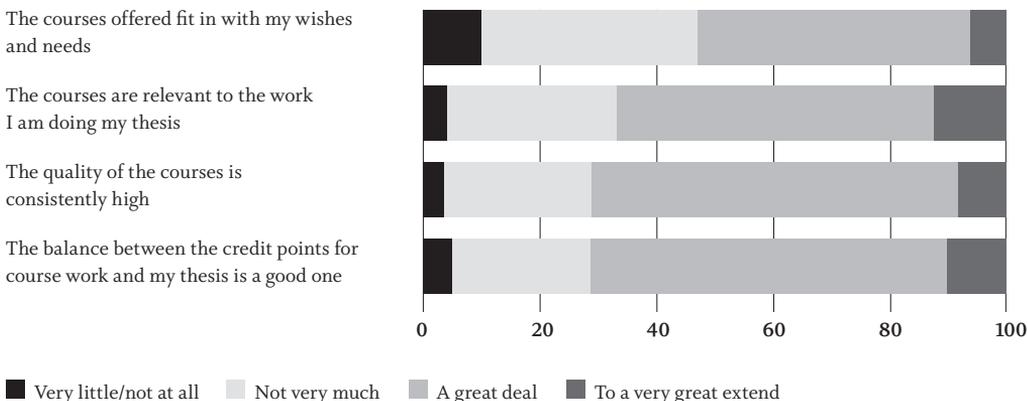
Even though many postgraduate students are satisfied, there are large proportions who feel that the range of courses offered does not apply to their programme goals. The solution to this problem may seem expensive as many research settings are small and it could appear unreasonable to provide a wide range of courses. More cooperation between different higher education institutions and different subjects, for instance on courses in methodology, could be tested more extensively.

5.3.6 REFLECTION AND VALUES

Personal development also forms part of the aim of higher education and this applies to both undergraduate and postgraduate studies. One element in personal development involves increasing the capacity for reflection over one's own values; another element is greater educational breadth. The overarching social goals for higher education also include the expectation that education will contribute to the development of democracy and greater understanding between people from different cultural or ethnic background.

Reflection and values
TO WHAT EXTENT HAVE YOUR DOCTORAL STUDIES INVOLVED

reflection over
your own values

greater understanding of social and
cultural differences based on gender

involvement in the development
of society

aquiring greater understanding of people
from another cultural/ethnic background

broadening your general education

■ Very little/not at all   □ Not very much   ▨ A great deal   ▨ To a very great extend
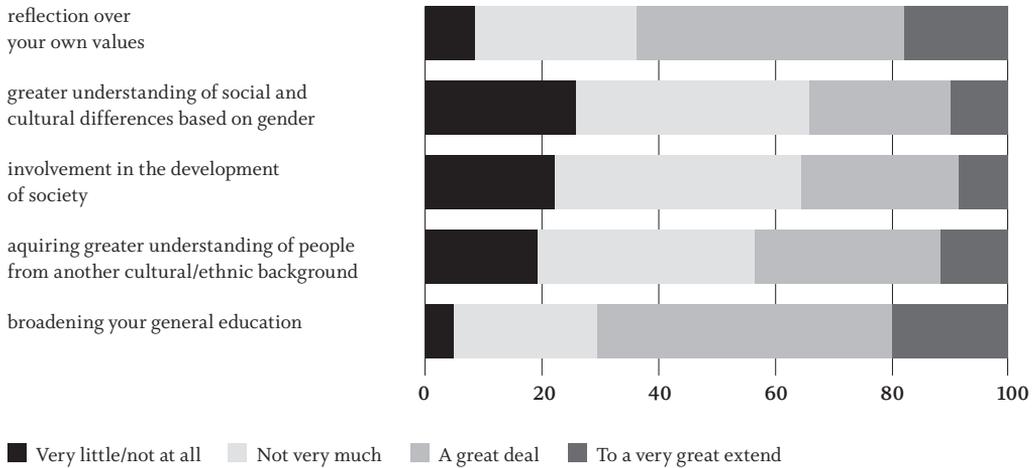
With regard to reflection and values, the responses are almost identical with the 2003 survey. The variation in responses is largely dependent on subject area. Many doctoral students feel that their programme provides an opportunity to consider their own values.

According to the majority of the doctoral students, however, the programmes do not encourage involvement with the community, increase understanding of social, cultural or gender differences nor do the programmes lead to greater understanding of individuals from other cultural backgrounds.

On the whole, the Reflections and values dimension reveals great differences between subject areas. This may be an expression of differences in the way the various programmes involve questions relating to values and human interaction. Postgraduate study in mathematical, scientific, technological and medical subject areas are felt to contribute far less to the development of the students' own values when compared with programmes in other subjects. It may be that issues relating to values have traditionally played a less important role in these disciplines. In a career oriented world, however, it may be important for both undergraduate and postgraduate programmes to offer both personal and professional development – not least in view of the goals of the Bologna Process.

5.3.7 STUDY ENVIRONMENT
The relationships between individuals sharing the same environment have a strong influence on how creative the environment will be considered as a workplace. A creative environment can, in its turn, provide a fertile and stimulating setting for postgraduate study. Influence can be a quality factor in many operational areas.

Study environments

To what extent have you experienced the
environment of your department as creative

To what extent have you felt that you were an
accepted member of the research collective

To what extent have you experienced your
postgraduate studies as positive and stimulating

To what extent have you had the feeling that
you could exert influence in your department

| 0 | 20 | 40 | 60 | 80 | 100 |

■ Very little/not at all □ Not very much ▨ A great deal ▨ To a very great extend

The responses with regard to study environment are virtually identical with the results of 2003. The majority of doctoral students consider their programmes to be positive and stimulating. However, over half feel the environment at their department is less creative. Two out of three doctoral students feel they have no means of influencing matters within their department.

Even if the length of time students have been pursuing their postgraduate studies is taken into account, the same image emerges – the degree of influence they exert is felt to be low. Is this due to lack of opportunity? Is this due to lack of interest from the students, or is their position as students a real obstacle to genuine participation in the academic community? Altogether the picture of the conditions in which postgraduate students work gives rise to the feeling that their environment is demanding and that they are to some extent marginalised.

Final remarks

The number of research students has risen considerably during the last decade. This is a major joint commitment, both by the community and by the students themselves. Not least from the point of view of the community, there are great hopes of enhanced innovation and growth. On the whole, the postgraduate students grade their programmes well. On the other hand, there is a definite and observable scope for improvement.

More information is available on the National Agency for Higher Education's website, and each university can access its own results. The Postgraduate Students Mirror Report[17] is published only in Swedish but the survey also offered a questionnaire in English for foreign students.

The International Postgraduate Students Mirror published in 2006, was based on the same core of questions and was conducted in Catalonia, Finland, Ireland and Sweden. More information about Study Design, Questionnaire and Method can be found at www.hsv.se/international_mirror.

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17   www.hsv.se/doktorandspegeln

Appendix

Introduction to postgraduate studies by subject area. Standardised scale with mean value 100 and confidence interval.

		1,8	2,1	2,3
TOTAL	2008			
	2003			
HUMANITIES AND THEOLOGY	2008			
	2003			
LAW	2008			
	2003			
SOCIAL SCIENCES	2008			
	2003			
MATHEMATICS	2008			
	2003			
NATURAL SCIENCE	2008			
	2003			
TECHNOLOGY	2008			
	2003			
AGRICULTURAL SCIENCES	2008			
	2003			
MEDICINE	2008			
	2003			
ODONTOLOGY	2008			
	2003			
PHARMACEUTICS	2008			
	2003			
VETERINARY MEDICINE	2008			
	2003			
OTHERS	2008			
	2003			

50   60   70   80   90   100   110   120   130   140
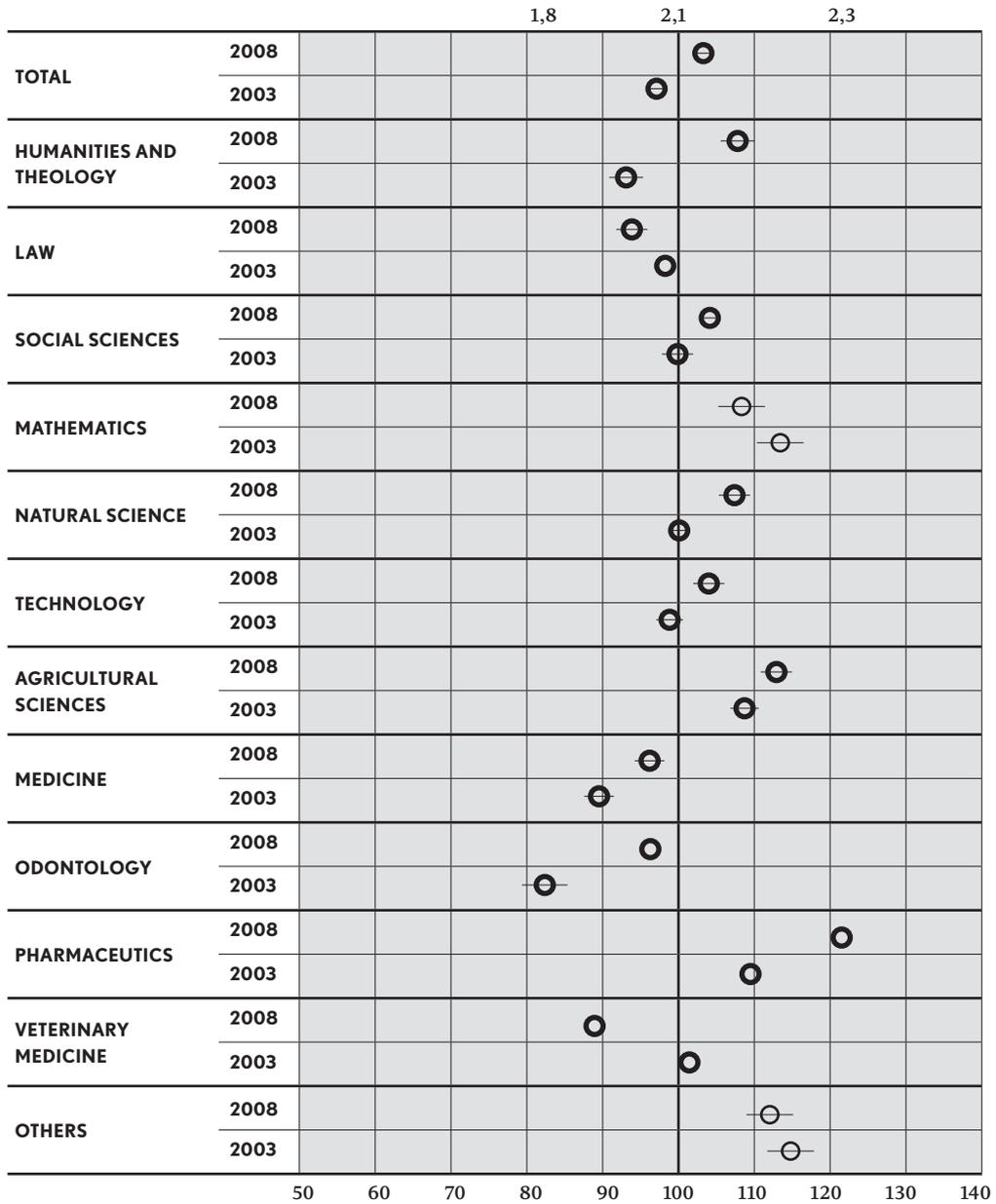
Chapter 6: Research Master's Programmes in the Netherlands

Fred Mulder[18], Policy advisor, Accreditation Organisation of the Netherlands and Flanders (NVAO) Secretary to the Biomedical Sciences and Earth Sciences Research Master's Assessment Panels

Summary
When introducing a type of master's degree programme that is very strongly geared towards developing research skills, it appears wise to determine what perspective on these new programmes one is to adopt. Stakeholders have formulated four perspectives on the Research Master's Programmes introduced in the Netherlands five years ago:

1. Exclusively preparing for a PhD;
2. Preparing for a position in research, but not necessarily a PhD;
3. Orientation on research, but with an intrinsic value;
4. Simply top education!

After briefly introducing the Accreditation Organisation of the Netherlands and Flanders (NVAO), this article explains what a Research Master's Programme is and NVAO's dealings with it. In conclusion, the four perspectives mentioned above are discussed.

6.1 NVAO
NVAO (in Dutch: Nederlands-Vlaamse Accreditatieorganisatie) is the Accreditation Organisation of the Netherlands and Flanders, which is part of Belgium. The organisation was established by international treaty. NVAO is based in The Hague, in the Netherlands. NVAO is a full member of ENQA, and is listed on the European Quality Assurance Register (EQAR).

NVAO's mission is to independently ensure the quality of higher education in the Netherlands and Flanders by assessing and accrediting programmes, and to contribute to enhancing this quality. Thus far, this accreditation system has operated at the level of programmes, not institutions.

In addition, NVAO contributes to raising quality awareness within higher education and advancing the position of higher education in the Netherlands and Flanders in the national and international context.

Its core business is accrediting all existing Bachelor's and Master's degree programmes in these two countries. Also, NVAO assesses proposals for new degree programmes that universities intend to launch. The actual assessment is done by expert panels. On the basis of their assessment report NVAO takes a *yes* or *no* decision.

6.2 Research Master's Programmes: main features
Research Master's Programmes (RMPs) are characterised by three features:

- They last two years, enabling students to spend up to a whole year performing hands-on research[19].
- RMPs are embedded in research departments that have proven to be of very good to outstanding quality.
- Admission is highly selective.

6.3 Reasons for the introduction of RMPs

Some six to seven years ago, when discussing on the need to have RMPs, a large number of arguments in favour of the introduction of this type of programme were presented. They may be summarised in five, partly overlapping, clusters:

1. Competition, both between Europe and the rest of the world and between the Netherlands and other countries in Europe;
2. Research as a factor contributing to economic growth;
3. The insufficient number of researchers and PhD students in the Netherlands;
4. The idea of high-quality programmes attracting international talent;
5. Demographic developments in the Netherlands.

To elaborate on this last issue: the population in the Netherlands is ageing and the number of young people is falling. Eventually, by the time the baby boomers start retiring, this could lead to a loss of vitality in research environments at universities, research institutions, and companies. Programmes offered in the Netherlands that create opportunities for Dutch and foreign students to become researchers should therefore be stimulated.

6.4 Number of programmes

The first RMPs were launched in 2004. Three years later, ten universities were providing 113 RMPs collectively. These were divided into five domains:

DOMAINS	PROGRAMMES
Humanities	52
Social Sciences	36
Behavioural Sciences	13
Biomedical Sciences	10
Earth Sciences	2

Since 2008, the growth curve has been flattening, resulting in a total number of 130 RMPs as of today (2009).

6.5 External Quality Assurance

As in the Netherlands accreditation is valid for a period of six years, it was, and still is, too early to report on the re-accreditation stage of RMPs. What follows is a succinct description of what RMP initial accreditation is like, in terms of both procedure and criteria.

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19 In many countries, two years is the default programme duration, but in the Netherlands the majority of master degree programmes in alpha and gamma disciplines are of one year.

6.5.1 PROCEDURE

Applications for new RMPs are assessed by expert panels appointed by the Royal Netherlands Academy of Arts and Sciences[20]. RMP assessment panels are composed of three to five Academy members plus one expert from Flanders. Currently, there are five RMP assessment panels, one for each of the domains mentioned above. A typical panel member is a professor with an established reputation in research. NVAO policy advisors act as secretaries to these panels.

In the "desk research" stage, assessment activity consists of critically reading the application file and, in the process, formulating questions to be answered by the applicant institution. In the face-to-face stage, the assessment panel invites a delegation from the applicant institution to attend a hearing involving questions and answers, and discussion. The panel's assessment report contains a positive or negative recommendation. This is first presented by the panel to the Board of the Academy, which either does or does not adopt it. The Academy then presents the assessment report, plus the position it has taken, to the Board of NVAO, which, likewise, either does or does not adopt the recommendation following the assessment. In the positive case, NVAO takes a formal *yes* decision immediately. In the negative case, NVAO refrains from immediately taking a formal *no* decision. Instead, a member of the NVAO Board informally conveys the negative decision to the Board of the applicant institution. Without exception, the institution will then withdraw the application, thus avoiding the negative publicity inevitably following a formal *no* decision. This is what happened to slightly over 25 percent of all applications.

6.5.2 CRITERIA

For RMPs, a specific initial accreditation framework was developed. Compared to 'regular' academic Master's degree programmes, this framework features similarities and differences. Both frameworks contain requirements pertaining to (1) aims and objectives, (2) the curriculum, including admission to the programme, (3) deployment of staff, (4) facilities, (5) internal quality assurance, and (6) conditions for continuity. As for the differences, RMPs are required:

- to feature a curriculum enabling students to spend up to a whole year performing hands-on research, resulting in a master's thesis which is convincing proof of research competence, and which is deemed of scientific value in the discipline concerned;
- to be embedded in research departments that have proven to be of very good to outstanding quality, evidence of which must be submitted in terms of recent research quality assessment reports;
- to be highly selective in admitting students. The evidence to be submitted on this issue is to include a criterion on the minimum average grade obtained in the course of a relevant academic Bachelor's programme, the minimal final mark for one's Bachelor's thesis, or the requirement of having been among the top-5 or top-10 percent of one's Bachelor's cohort. Because most RMPs are taught in English, it is often required that candidates can demonstrate their command of that language.

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20 On this institution's web site it is stated that: "As the forum, conscience, and voice of the arts and sciences in the Netherlands, the Academy promotes the quality of scientific and scholarly work and strives to ensure that Dutch scholars and scientists make the best possible contribution to the cultural, social, and economic development of Dutch society." [www.knaw.nl]

6.6 Student numbers

One highly relevant issue is student numbers. Extrapolating from a survey[21] conducted by the Social Sciences Council, an advisory council which is part of the Academy (other reliable sources are non-existent), we find a cumulative enrolment of some 3000 students for all RMPs in the three year period from 2004 to 2006. At first sight, this is quite an impressive number. But divided by the number of years and by the number of RMPs it comes down to a meagre average of 10 students per cohort, whereas most RMPs have both the capacity and the wish to accommodate from 15 to over 20 students. This is considered disappointing by many. In higher education circles, there appears to be consensus on a twofold explanation:

- the limited familiarity with RMPs;
- the image of RMPs as "pre-doctorate classes", as "the gateway to a PhD". For students with no ambition to obtain a PhD, it is currently not clear what the added value of completing a research Master's programme would be, given that it requires a great deal more effort than a regular Master's programme.

6.7 RMP and PhD

We have now arrived at the interesting discussion about the relationship between RMP and PhD. In order to share this discussion with the reader, we will draw from a conference on Research Master's Programmes held in 2007[22]. The conference was entitled *The Research Master's in the university landscape* (English translation). It was organised by NVAO in concert with the Academy, the Association of Universities in the Netherlands, the Netherlands Rectors' Conference, and three student unions. Without exception, those who made presentations at the conference formulated their ideas on the relationship between RMP and PhD. We have selected some interesting quotes and analysed them as representing four different perspectives.

PhD only, but brighter prospect
"The prospect of the third cycle, the PhD track, could be made a lot sunnier. The current low number of available PhD positions is not a satisfactory criterion for defining the desired enrolment into the research master. These numbers should be much higher. The number of PhD students at universities in the Netherlands is also low in comparison with universities abroad."

Research yes, but not necessarily PhD
"Qualified young researchers can be of much more importance and can be equally deployed elsewhere than merely at the entrance gate to a PhD."
"There are many types of research apart from the purely academic kind. There is applied social science research, different kinds of marketing research and research in educational settings."

Orientation on research yes, but intrinsic value
"The Research Master's should offer an orientation on research. This would make it possible for students to decide whether research suits them and if they would be suited

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21 The survey is in Dutch, but it features in a contribution by prof. dr. R. Andeweg to a NVAO publication available in English [1].
22 In 2007, well into the third academic year featuring RMPs, NVAO decided to take stock, so to speak. We analysed all the applications received thus far, with their assessment reports, conducted a survey among RMP stakeholders, organised a conference, and published a booklet entitled "Research Master's Review 2007 – The exploration of a new domain." [ref.]

for research. At the same time, students should have the guarantee that even if they do not continue with fulltime research by doing a PhD later on, they will have built up a more than sound basis to take up another research direction. Additionally Research Master's students learn to be critical and ask questions. Young academics should learn a way of thinking that will educate them for life and in which they learn to differentiate between what the society already knows and what is yet to be discovered. It is essential to care about the difference between the two."

Top education
"What a pity so many students miss out on the opportunity of a well-taught programme because they do not specifically desire to pursue a PhD trajectory. This kind of top education should be expanded. Standard Master's programmes should become more like the Research Master's programmes.", and
"This is the kind of education I always wanted to have. Tutoring is on a small-scale. This is education as it should be available everywhere, in Bachelor's programmes too."

Conclusion
Despite their differences, these contributions do have one thing in common: RMPs are regarded as enriching the landscape of university programmes, presenting talented students with an additional challenge. What remains to be done is for universities and other stakeholders to stimulate familiarity with RMPs and to enhance clarity of perspective on these programmes.

References
[1] Research Master's Review 2007, The exploration of a new domain. Snijder, J.K. & David, S.A.(eds.), NVAO, December 2007. Downloadable from www.nvao.net

Chapter 7: Quality Assurance of Doctoral Education in Germany – Experiences, Standards and Challenges

Manuel Pietzonka, Central Evaluation and Accreditation Agency Hanover (ZEvA)[23]

7.1 Quality assurance (QA) of the third cycle in Germany

In Germany, a doctoral degree can be obtained from universities only, either from doctoral schools specialised in one discipline or from the department offering a PhD-programme or organising the individual coaching of the doctoral candidate. Doctoral schools are sometimes funded by the German Research Foundation (DFG) or supported jointly by a university and the Max Planck Society. Advanced lectures on specialised topics. Course examinations are part of these programmes, for which the university takes responsibility. This paper refers only to PhD programmes offered by universities. Because of Germany's federal structure, higher education is governed by state laws. According to Lower Saxony's state law on higher education, Bachelor, Master and PhD programmes have to be externally accredited.

7.2 ZEvA's experience in accrediting PhD programmes

ZEvA stands for "Central Evaluation and Accreditation Agency Hanover". The agency was founded in 1995 as an evaluation agency. It is the oldest institute for quality assurance in higher education in Germany. In 1998, ZEvA established a department of accreditation. ZEvA has been actively evaluating, consulting and accrediting programmes and institutions. The agency is an independent private foundation accredited by the German Accreditation Council and listed in the European Quality Assurance Register for Higher Education (EQAR).

ZEvA has accredited PhD programmes of nearly every university in the State of Lower Saxony. Institutions of Higher Education outside Lower Saxony are not required by law to accredit their PhD programmes. However, some of them use the advantages of accreditation and apply to ZEvA for their PhD programmes accreditation.

7.3 Advantages for universities

The accreditation of PhD programmes has many advantages for universities. As a consequence of external assessment, the *transparency* of a programme increases (e.g. with respect to admission, entrance requirements, course requirements, consultancy and coaching, funding, etc.). In turn, this transparency increases the *mobility* of students and enhances the *internationalisation of the programme*. Indeed, a quality assured PhD study course is more attractive to students from abroad. When a programme is accredited, the applicants know better what is expected from them (concerning e.g. workload, types of examinations, etc.). Thus, these programmes have a *competitive advantage*. The applicants will be able to compare different programmes in

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terms of competences to be gained, entrance requirements, support by senior advisors, consistency of the curriculum, etc. ZEvA supposes that accredited PhD study courses provide more (and better organised) *support*.

External accreditation of the third cycle avoids wheeling and dealing. The selection of participants is made in accordance with internationally established standards. The competition between universities by establishing most attractive PhD programmes in order to call the best graduates' attention leads to higher quality standards. Thanks to accreditation, universities can expect better *results*, which in turn will have positive effects on external research funding and the reputation of the institution.

7.4 Challenges for the agency and its experts

Heterogeneous contexts

PhD programmes are more heterogeneous in terms of requirements, structures, forms of organisation and funding than Bachelor's and Master's programmes. This diversity has to be considered in the accreditation process.

Specificities of PhD programmes

Supervision and mentoring are part of every PhD programme. QA agencies need specific criteria for measuring the quality of these elements. Furthermore, agencies have to assess the working and studying conditions of PhD students, the intended outcome of the courses and the conditions of acquiring ECTS credits.

Evaluation and Consulting vs. Accreditation

The agency's policy regarding the relationship between consultancy and accreditation has to be clearly defined. On the one hand, an agency which evaluates a programme in order to offer consultancy to the persons in charge of the programme should not accredit the same programme because the agency would assess its own organisational competence. On the other hand, to a certain extent every accreditation implies consulting to the extent that the assessment of the programme reveals its strengths and weaknesses.

Standardisation vs. Transparency

Accreditation does not aim for standardisation, because this would destroy the specific culture of each programme. Programmes can differ in many respects, e.g. scholarship and tradition of the discipline. Only a few general standards should be considered in the accreditation of any doctoral programme. In order to set up such general standards, agencies have to look for similarities in *all* PhD programmes. In addition, it is a challenge for the agencies to make sure that the experts do not try to force their ideals upon the conception of the programme, but judge it by its own goals. This is a problem in every accreditation in general, but it is of particular importance in the third cycle.

7.5 ZEvA Standards for the accreditation of PhD programmes

In 2003 ZEvA published standards for the accreditation of PhD programmes. These standards were revised in 2008. They are aligned with the National Qualification Framework (NQF), the European Qualification Framework and the Dublin Descriptors (for BA, Ma & PhD programmes, 2004). ZEvA's standards are defined for the following elements:

1. Profile
2. Entrance requirements and Admission
3. Structure & Curriculum
4. Internationalisation & Cooperation
5. Quality Assurance
6. Financing & Organisation

PhD programmes differ according to academic goals and traditions of the discipline. However, some general standards should be met by every PhD programme. In what follows only a selection of key aspects of ZEvA's standards are presented:

Profile:
The programme should be characterised by an academic profile on the basis of profound research activities of the teaching staff.

   PhD candidates should meet the following requirements:
*   Gain methodical expertise and knowledge for highly qualified occupations; Acquire competence to participate actively in research activities and to initiate research projects
*   Develop the conception for a thesis that suffices international standards; Acquire excellent problem solving capacity:
*   Gain the ability to successfully engage in post-doctoral research work,
*   Participate in didactical and methodical training for the promotion of teaching skills;
*   Enhance the ability to work cooperatively.

Eligibility requirements
The programme should have a transparent selection procedure. It should be open to the best graduates or graduates with excellent academic records in higher education institutions only. The individual selection should be based on academic and personal qualifications. Part of the eligibility requirements should be the submission of a thesis project and a work plan.

Structure and curriculum
Students need a clearly defined programme structure which includes opportunities to work cooperatively. The individual research work has to be complemented by comprehensive courses (e.g. on advanced research methods, research ethics, soft-skills). There should be an appropriate duration limit for doctoral studies.

   Students participating in a doctoral programme should acquire key skills, especially in the following fields:
*   Presentation and moderation, conduct of negotiation, project management;
*   Ability to teach at university level;
*   Foreign languages.

Internationalisation and Cooperation
International exchange programmes and cooperation with other universities should be included in the programme. The persons who wish to know the details of the programme should be able to get the information easily.

ZEvA recommends universities to carry out research projects abroad and to encourage the exchange of students and staff.

Quality Assurance

Quality assurance procedures for the programme comprise:
- an external peer review to guarantee the appraisal of consistent standards;
- the individual selection of participants on the basis of academic and personal qualifications; and
- course evaluations by the students.

Financing and Organisation

The programme (including staff) must be funded appropriately. A minimum of 70 percent of the course offers should be covered by internal staff. Internal and external staff should work under a legally binding work contract.

Literature
- Report from a Joint Quality Initiative informal group: Shared "Dublin" descriptors for Short Cycle, First, Cycle, Second Cycle and Third Cycle Awards, 18 October 2004
- Hochschulrektorenkonferenz (HRK), Kultusministerkonferenz (KMK) und Bundesministerium für Bildung und Forschung: Qualifikationsrahmen für Deutsche Hochschulabschlüsse, 21 April 2005
- ZEvA: Allgemeine Standards für die Akkreditierung von Doktoranden-Programmen an Universitäten, 02 June 2003

Chapter 8: Accreditation of doctoral schools in Hungary

Judith Négyesi, Hungarian Accreditation Committee (HAC)

8.1 Some figures

Table 1. Students in higher education and the target group of doctoral training (numbers in thousands)

	2006	2007	2008
students admitted in higher education institutions	416	398	381
new degrees issued	65.9	63.3	
THE TARGET GROUP OF DOCTORAL TRAINING			
new degrees in the undivided "traditional" 5-year training	18.5	18.3	
new MA/MSc degrees	0.11	0.984	

(Source: Central Statistical Office)

Table 2. Number of doctoral students and the degrees issued

	2006	2007
doctoral students	7,784	7,153
new doctoral degrees	1,012	1,059

(Source: Ministry of Education)

Table 3. Number of teachers in higher education and doctoral education

	2006	2007	2008
teachers in higher education	23,200	22,000	22,400
NUMBER OF FACULTY MEMBERS ENGAGED IN DOCTORAL EDUCATION			
faculty members engaged in doctoral education			9,271
core members of doctoral schools			2,284
supervisors in doctoral schools			5,119
teachers in doctoral schools			1,868

(Source: Ministry of Education, Hungarian Accreditation Committee)

Table 4. Number of higher education institutions and doctoral schools

	STATE-OWNED	PRIVATELY (NON-CHURCH) OWNED	PRIVATELY, CHURCH-OWNED	TOTAL
universities	18	2	5	25
doctoral schools at universities	153	4	12	167
colleges	11	13	21	45
Total	29	15	26	70

(Source: Hungarian Accreditation Committee)

There is no college with a doctoral school yet.

8.2 Historical background and legal framework

In Hungary, universities had the right to issue doctoral degrees before 1949, e.g. a 1920 act enabled the Faculty of Economics of the Royal Hungarian University to issue the degree of "doctor of economic sciences".

In 1949, Hungarian universities lost their right to carry out doctoral education. The Scientific Qualification Committee, a government organisation at the Hungarian Academy of Sciences, became the sole organisation entitled to issue the scientific degrees "candidate of .... sciences" and "doctor of ... sciences".

Hungarian universities got back the right to carry out doctoral education and award PhD/Doctor of Liberal Art (DLA) degrees with the first Act on Higher Education of 1993. Today the Act CXXXIX of 2005 on Higher education and the government decree 33/2007 on doctoral education provide the legal framework for doctoral education in Hungary. The detailed rules are set forth in the Doctoral Regulation of the higher education institution (HEI).

8.2.1 LEGAL CRITERIA

Doctoral studies may be provided by HEIs which also provide master training in the given branch of science or art. In the field of arts, institutions may be licensed to provide PhD programmes preparing for an academic degree, or DLA programmes preparing for a "Doctor of Arts" degree (hereinafter collectively: doctoral studies).

The organisation of doctoral studies, the assessment of PhD students and the tutoring and conferring a doctoral degree are overseen by the doctoral council of the HEI or the discipline-specific doctoral council, and their rules are specified in the institutional doctoral regulations. Doctoral councils may be organised by discipline of science or a branch of art.

Doctoral studies take 36 months (i.e. six semesters) and are adjusted to the specific features of the given discipline and the needs of the PhD student. They may be provided individually or in a group, and involve training, research and examinations. The students' workload is measured in at least 180 credits. The training blocks include obligatory and elective courses with compulsory examinations. Some of the courses are inter-disciplinary, as for certain research topics, the subject or methods are not related to a single branch of science.

Following the completion of doctoral studies, a doctoral degree may be obtained in a separate procedure which lasts two years on average. The students participating in the procedure for obtaining a doctoral degree are called doctoral candidates. Those who did not attend doctoral studies but prepared for obtaining the degree on their own may also become doctoral candidates.

The organisational unit for doctoral training in Hungary is the *doctoral school*, organised in a given discipline or cooperating disciplines. The rector shall forward both the documentation relating to the launch of graduate courses and the regulations pertaining to the doctoral school to the Hungarian Accreditation Committee (HAC). A minimum of seven key scientists (four of them must be full professors) can initiate and operate a doctoral school. They are the core members who establish the school and determine its scientific character and quality. Other scholars may join them later on. The school should have a coherent training and research programme, including announced courses and research themes for students. Further working documents are by-laws of the school, forms of assessment, enrolment conditions, quality assurance procedures and a complete, up-to-date website.

The courses may start once the HAC has given its consent thereto in its expert opinion, the university senate has given its final approval, and the HEI has notified the registration centre of the Ministry of Culture and Education of the launch of such courses.

8.2.2 HAC CRITERIA

There are *formal* and *performance* criteria for the eligibility of **core members**. Formal criteria consist of age (professors under 70, others under 65), position (a person can be a core member only in one doctoral school at the same time), topic announcement, dissertation supervisor activity, and scientific degree. Senior scientists from research institutes may be invited to schools as core members, lecturers or supervisors.

Personal performance eligibility criteria involve at least 0,5 (if supervised by two supervisors) supervised student who successfully acquired a PhD degree, continuous scientific productivity which is indicative of professorial quality, a reasonable amount of citations (strongly dependent on the discipline) and that the person's research field fits into the profile of the school. The final result of an individual evaluation is public; the details are accessible only to the person in question and the head of the respective school.

The criteria for **doctoral schools** are more complex. A minimum of seven eligible core members is the basic condition defined by the government decree on doctoral education. In order to ensure high quality, the HAC requires that at least four of the core members must be professors. In case of recently established schools, at least three core members should have successful supervisory activity. The formal conditions involve an accredited master programme in the discipline of the school, proper documents, such as by-laws, training programme, enrolment process and conditions, assessment methods, quality assurance procedures, and an informative up-to-date website. The research programme must be based coherently on the profile of the school core members.

8.3 The electronic doctoral database

HAC and the Hungarian Doctoral Council (HDC) decided in 2007 to establish a common, national-level **electronic database** available at *http://www.doktori.hu*. The aim of the database was to make information about doctoral education and its quality accessible to the public. HAC's special aim is the regular evaluation of the quality and performance of scholars and the accreditation of doctoral schools in a purely electronic process. The data was uploaded and can be updated exclusively by the authorised persons: more than 6,000 scientists and 200 responsible administrators of schools and universities. The database contains around 200,000 items of data, including links to school websites and participating individuals. The access to E-mail addresses and phone numbers allow for an easy contact with the concerned persons. It is a "living" database, updated on an ongoing basis. Various user guides are available in the database for scientists, peer reviewers, administration coordinators of the schools as well as for external evaluators of HAC. The volume of data differs according to the level of accessibility, in compliance with regulations on human rights and data protection.

8.3.1 DATA IN THE DATABASE

The following data of **scientists** appear in the database[24]: name; age; position; scientific degree; university; doctoral school; [e-mail, phone]; research area; number and names of doctoral students supervised; completed and conferred PhDs; five most important publications in the last five years; an additional five most important publications overall; impact factors and number of citations from the last five years and in total. After evaluation, the status of accreditation is indicated by a HAC logo.

Doctoral schools pages record the following data: university; HAC identification number; school name; head; discipline(s); degree conferred (PhD/DLA); year of establishment and operation; number of scholars, from those, the supervisors and core members; Master programmes of the given university recognised as entrance requirement; number of doctoral students supervised; passed PhD examinations and PhDs graduated in the school; broken down to all scholars. Dissertation topic announcements, by-laws, training programmes and QA procedures are linked to this data. Successful accreditation is indicated by the HAC logo.

8.4 The 2007/2008 evaluation procedure

In 2007/2008, HAC carried out a comprehensive pilot evaluation of the operating 157 doctoral schools. HAC investigated to what extent core members and doctoral schools complied with the above mentioned legal and performance criteria laid down in the new government decree and with the HAC requirements (both published earlier in 2007). This was necessary since the new law also required universities to revise their doctoral regulations to comply with the law.

At the first stage the core members were evaluated. Then, based on these outcomes, the doctoral schools as operating units were assessed. This process had no legal consequences; the evaluation provided instructive indicators and assigned lessons for the scholars and schools, with judgements in one of three levels: *eligibility, partial eligibility* and *no eligibility.*

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24 Only data relevant for HAC evaluation are listed here.

Some figures on the project are as follows:

Participation:

141 external experts

26 HAC committees

134 members of HAC bodies

12 specialists of HAC secretariat

Outcomes

5,590   peer reviews

7,552   evaluations by different bodies

52,437   assessments of various kinds

38,506   explanations of findings

7,235   decisions on the various levels, including

2,507   final HAC decisions

DISTRIBUTION OF DECISIONS:	DECISION	CASES	RATIO
core members	eligible	1,426	61 %
	partly eligible	475	20 %
	not eligible	439	19 %
doctoral schools	eligible	45	27 %
	partly eligible	103	62 %
	not eligible	19	11 %

8.5 Some general observations and conclusions for the 2009 accreditation round

- The majority of doctoral schools and scholars understood and supported the idea of establishing and operating a nationwide open, electronic database;
- The fairly complex and extensive data uploading procedure was completed in 2–3 months and resulted in a full database – nothing of the kind existed earlier in Hungarian academia;
- The evaluation procedure was a major challenge for all participants on the HAC's side, and was carried out successfully;
- A decisive majority of the decisions was accepted and a relatively slight number of objections was addressed to HAC;
- Detailed opinions, both positive and negative, formulated during the evaluation process revealed valuable information which can be used by scholars and schools in the future, thus contributing to a better quality in PhD training in Hungary in general and at individual universities in particular;
- The open database provides a detailed and objective picture of the scientific character and performance of Hungarian higher education – both on personal and structural levels – for the scientific community, for prospective doctoral students and for the public at large;
- Collected data about doctoral education and PhD degrees provide individuals, schools, universities and national bodies with informative analyses;

- The pilot project revealed that scientific publications are interpreted rather broadly. This requires discussion, a sort of common understanding and agreement in the community of a given discipline. HAC favours, and in most cases requires, publication in internationally referred journals.

With a goal of improving the quality of the list of selected publications in the database, a detailed guide of eligible publications was made. Also, links for importing publications from other databases were created.

Scientists can now have access to a link to their own full list of publications.

- Realising the importance of citations, HAC now asks scientists to provide citation data.
- The impact factor (IF) of publications should also be provided. Those who do not have any publication in a journal with an IF can provide the number of their foreign-language publications.
- There are marked differences in how meticulously various doctoral schools are organised. The database is a valuable instrument for the dissemination of good practice.

8.6 The 2009 evaluation procedure

The evaluation aspects were public from the beginning. It is worth underlining that in this database both the evaluated data and the final HAC evaluation decisions are made public.

The completion of re-accreditation procedures for all the 157 doctoral schools accredited before 2008 is scheduled for 2009.

The evaluation procedure is based on two anonymous peer-reviews in each involved discipline. From among scientists, only core members will be evaluated. In the next step the relevant disciplinary expert committee of the HAC will assess both core members and schools, and formulate a proposal for the HAC Doctoral Committee: a core member can be *eligible* or *not eligible*; a doctoral school can be *accredited* or *not accredited*. The HAC Doctoral Committee will review all proposals and prepare the decisions for the HAC plenary meeting. No paper but only PCs and projectors are used during the various steps of the process. Details of the HAC final decisions automatically appear in the database. In accordance with the HAC *Code of Ethics*, those concerned in a specific case are absent during negotiations and decisions.

8.7 Conclusions for quality assurance

- The nationwide, regularly updated electronic PhD database is a successful innovation in Hungarian higher education, and it is accepted and supported by the majority of Hungarian academia. It provides a solid basis for quantitative and qualitative analyses from different aspects, including performance and quality of core members and doctoral schools. There were and are voices opposing the present open and public nature of the database, but HAC is convinced that the database is important to enhance the quality of doctoral training in Hungary.
- After the pilot project was completed, there was an immediate public response to the evaluation procedure in the press. Moreover, an extensive electronic questionnaire was carried out by the Centre for Higher Education and Development leading to several important proposals for the 2009 accreditation

round. The questionnaire underlined the need and importance of much better and broader information on the 2,300 core members that both HAC and doctoral schools need to provide.

- In general, it was affirmed again that the openness of the database to the general public contributes to the development of a new type of quality culture: people are more serious about their performance if they are exposed to the public, including colleagues and doctoral students. Publicity of data and evaluation stimulates doctoral schools and their members to produce high quality results.

- As an immediate response and impact of the evaluations, around fifty modifications were carried out in the database by different schools to correspond to the standards (modification of by-laws, new research topic announcements, improved websites, inclusion of citation data, etc.). Some schools invited new core members to ensure better performance. Additionally, doctoral schools reported more than a hundred corrections and requested HAC to modify the evaluation judgement. Ratings of 30 core members and 36 doctoral schools were changed based on these corrections. Thanks to the database, university doctoral councils have already analysed the status of their third-cycle educational system and introduced important quality assurance measures, e.g. internal ranking, amendments in institutional regulations, re-distribution of state scholarship places. Some schools are under reorganisation to ensure meeting basic requirements for accreditation. HAC provided and still provides personal consultancy for doctoral schools.

- Standards of core membership and doctoral schools demanded good quality performance in tutorial, research and organisational work. HAC is carrying out a systematic investigation of by-laws of all doctoral schools and formulates proposals for minimum quality standards. These standards for doctoral schools establish well organised training and research activity. Regular assessment of doctoral students in the framework of the schools is a crucial element for success.

- Internal quality assurance of doctoral schools which are in most cases in an early stage of development must and will be supported by HAC through a systematic assistance in accordance with the Standards and Guidelines for Quality Assurance in the European Higher Education Area.

- In 2008, HAC organised two nation-wide forums for doctoral schools to consult about reasonable changes in the database and the evaluation procedure for the 2009 accreditation round. The current criteria reflect proposals collected at these forums.

- The 2009 accreditation round involves a new element, a non-public self-evaluation report with C-SWOT-analyses, which helps to identify challenges for each participant (i.e. core members and doctoral schools). With this development, HAC wants to move towards a more analytical approach regarding their performance, in addition to the already introduced important numerical data.

- An annual survey of core members and doctoral schools will start in 2010 to ensure continuous high performance. The results of the survey will be presented to the rectors, doctoral schools and HAC. The preparation of the doctoral schools for the 2009 accreditation process and the subsequent survey will definitely be a powerful tool to enhance the performance of Hungarian doctoral education and the internationally recognised quality of our PhD degrees.

8.8 Accreditation of new doctoral schools

The database also serves in the accreditation of new doctoral schools. Since the establishment of the database, 18 new schools have asked for accreditation. They were assessed in the same way as the other 157. The HAC decision was either "*accredited*" (in eight of the cases) or "*not accredited*" (in 10 of the cases). Seven accreditations are valid for eight years (the regular accreditation period in Hungary), and one for four years. Non-accredited schools can apply again at any time when they feel that they can fulfil the requirements – as it happened in two cases. There is a fee for each new accreditation process, while the evaluations in the pilot project were, and the accreditations in 2009 will be, free of charge for the institutions.

Chapter 9: Quality assurance of doctoral study programmes in Croatia

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Introduction

By signing the Bologna Declaration, Croatia joined European countries that had started reforming their doctoral studies. The reform in Croatia is characterised not only by the formal structure of the three Bologna cycles, but also by study programmes based on learning outcomes and comparable to those in developed EU countries.

There are ten accredited universities in Croatia, seven public and three private. Accredited doctoral programmes have been so far carried out only at public universities: four larger public universities are organised via faculties as their constituent parts, while three smaller universities are organised as departments.

Accreditation of doctoral study programmes started at the beginning of 2006 and was carried out by the Agency for Science and Higher Education (ASHE[25]) and the National Council for Higher Education (NCHE[26]).

9.1 Basis for accreditation of doctoral studies

The establishment of postgraduate doctoral studies in Croatia is guided, among others, by the document entitled *Principles for the Establishment of Doctoral Studies* adopted in 2006 by NCHE.

The document contains 22 principles which are divided into general principles, principles related to studying and principles related to organisational and financial aspects of study programmes. The document states that NCHE shall ask for adjustment of the structure of a doctoral study programme if it deviates significantly from the principles.

We would like to emphasise the following parts of the document:

- Quantitative data contained in the document relates to ECTS and mentorship criteria – out of a total of 180 ECTS that can be achieved during the course of doctoral study at least 30 and at most 60 may be achieved via direct teaching. All other ECTS are achieved through scientific training and work on dissertation;
- Regarding mentorship criteria, NCHE demands that potential mentors have published at least three contributions of international significance during the last years and have participated in at least one international meeting during the same period;
- NCHE recommends the establishment of one doctoral study programme in a scientific or artistic field with several study branches. When it is necessary to achieve a higher degree of interdisciplinarity, NCHE proposes to look into the possibility of organising a joint doctoral study programme between more faculties/ departments within one university or between several universities and public scientific organisations;

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25 ASHE is an independent government institution dealing with quality assurance in higher education and science.
26 NCHE is a parliamentary body dealing with strategic issues related to higher education: until the new Act on Quality Assurance in Science and Higher Education (April 2009) it also dealt with accreditation of study programmes and HEIs.

- A proposal of a programme of postgraduate doctoral study also has to contain a list of excellent research projects, indicate the place where they are carried out and the heads of projects that can be mentors for doctoral dissertations. It is necessary to mention possible previous experience in mentoring doctoral dissertations and attach a list of original scientific articles published in the last five years as a proof of international visibility;
- Quality education must be accessible to everyone and, therefore, it is necessary to create conditions for students of doctoral studies that enable them to finish their studies without obstacles stemming from their social or economic background;
- The organiser of the study programme has to provide information on scholarships for foreign institutions and establish adequate and organised support to students in their scholarship competition. A system of support has to be anticipated and included in the study programme prior to accreditation. Also, the organiser of doctoral study programmes should look into the possibility for foreigners living outside Croatia to become involved in the programme (as a student, lecturer, mentor, or member of the evaluation committees) in order to add objectivity to the whole process.
- The number of enrolled students depends on the resources available, with the emphasis placed on the number and availability of appropriate mentors (so-called „mentorship capacity").
- Doctoral study programmes are extremely important to the current and future development of science and higher education in Croatia. Therefore students of postgraduate doctoral studies should not have to pay tuition fees.

The procedure of initial accreditation could start after the programmes had been described in Croatian and English in accordance with the *Instructions of the Rectors' Conference on Drafting Proposals of Postgraduate Study Programmes*. These Instructions are collected through a joint template form and apply to all proposals of doctoral study programmes.

The most important elements contained in the Instructions are:

INTRODUCTION
- Reasons for launching study programme;
- self-evaluation of the programme justification, especially regarding Croatian scientific and technological development and linked national strategic priorities;
- comparability with programmes of distinguished higher education institutions from abroad, especially from EU member states;
- past experience of the organisers in carrying out postgraduate doctoral study programmes.

GENERAL PART
- partnership with the industry and business sector in launching and carrying out doctoral study programme;
- criteria and procedure of student selection;
- learning outcomes;
- possibilities for continuing research, for post-doctoral education and employment in public and private sector.

PROGRAMME DESCRIPTION
- obligatory and elective activities (participation at seminars, conferences, roundtables, etc.) and ECTS criteria;
- methods of quality assurance of each subject and/or module;
- system of guidance through study, method of student selection, obligations of study councillors and mentors as well as doctoral candidates;
- procedure and conditions for evaluation of doctoral dissertation;
- conditions under which students who have dropped out or lost the right of studying at one study programme can continue their studies.

STUDY CONDITIONS
- data on research resources (scientific equipment human resources);
- list of scientific and development project upon which doctoral programme is based;
- estimate of expenses for carrying out doctoral programme and cost of study per student;
- sources of financing doctoral programme;
- institutional mechanisms for improving the quality of doctoral programme (self-evaluation and evaluation, student questionnaires, review of success of doctoral study, quality indicators).

9.2 Initial accreditation of doctoral study programmes (2006–2009)

On the basis of the above mentioned documents, the faculties make their own decision on launching a doctoral study programme and send a request to the University Senate which, in the majority of cases, appoints two reviewers for internal evaluation of the study programme. If reviews are positive, the Senate adopts the faculty's decision to launch a new doctoral study programme.

Having obtained permission from the University Senate to launch a new doctoral programme, the faculty submits a request for accreditation of the programme to the Ministry of Science, Education and Sports which asks NCHE and ASHE their opinion (initial accreditation).

The accreditation procedure is carried out via the online system MOZVAG, which allows for faster and more efficient communication between all participants in the process (Higher Education Institutions (HEIs), ASHE, reviewers and NCHE). MOZVAG is also an archive of all documents – programme descriptions, review reports and NCHE recommendations.

MOZVAG[27]

Figure 1. MOZIR, a system developed for referees (i.e. peer-reviewers).

At least two reviewers are appointed for each proposed study programme, including at least one reviewer from abroad.

The review report consists of four main parts:

1. Justification for opening the study programme
2. General structure of the study programme
3. Subjects: content, workload and teaching methods
4. Teaching and scientific conditions for doctoral study programme

In some cases, reviewers require that certain changes are made in the programme. The HEI has to revise the programme and sends the revised programme description to the reviewers. MOZVAG system is used throughout all these steps.

On the basis of the review results, NCHE delivers the Minister of education its opinion and recommendation whether to grant or deny the faculty a license for the doctoral programme.

9.3 Re-accreditation of doctoral studies

A license for doctoral studies granted following initial accreditation does not mention a specific time period, but all study programmes are re-accredited through a cyclic procedure of institutional evaluation carried out every five years.

Institutional evaluation is a mix of evaluation and accreditation. Its outcome is either time-limited re-accreditation of the HEI and its study programmes or denial of re-accreditation. Therefore, re-accreditation of a single doctoral programme is part of the re-accreditation of a faculty and other study programmes. The criteria related to doctoral study programmes were drafted according to the previously mentioned

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27 MOZVAG is a system for IT support of the evaluation of study programmes developed by the University Computing Centre (SRCE) in 2005.

document *Principles for establishment of doctoral studies*, which was further developed by NCHE. For example, while the *Principles* document state that a mentor should have "scientific qualification and international visibility"; the *Criteria for the Evaluation of Higher Education Institutions within Universities* precisely define what this scientific qualification is.

The quantitative criteria mentioned in the Criteria document that are directly related to doctoral study programmes are the following:

- Availability of at least 20 academically qualified mentors of international repute in the scientific field of the doctoral study programme. If a doctoral study programme includes two or more scientific fields, at least 10 mentors are necessary for each scientific field. The same mentor may not apply for more than one doctoral study programme;
- Measurability of the mentor's scientific qualifications (at least three scholarly papers admissible for appointment into a scientific grade in the given field in the last five years and at least one participation at an international conference in the last five years);
- Entry policy for doctoral studies, which takes into account the compatibility between the total number of students in the three years of the doctoral programme and the number of available mentors, so that there is one mentor for a maximum of two doctoral students in the scientific field;
- Performance of only one doctoral study programme in a scientific field at a university, except in special cases where there is an evident scientific and teaching incompatibility between the branches within the scientific field. The same applies to joint doctoral programmes and the participation of scientific institutes.

Qualitative criteria could only be expressed descriptively. Here, we will not present general criteria relevant to every study programme and HEI as a whole, such as efficiency in achieving learning outcomes, but will concentrate only on those directly related to the quality of doctoral study programmes:

- Organisation in conducting the doctoral programmes (enrolment policy, mentorship allocation procedure, choice of a thesis topic, monitoring of the scientific improvement of doctoral students and assessment of the thesis quality in accordance with European and international standards);
- The proportion of the doctoral students' time dedicated to scientific research and other obligations (taking courses, studying for and taking exams, holding seminars, etc.) during their studies;
- Total scientific and international activity of teachers and associates at the evaluated HEI;
- Availability of national and foreign scientific and professional journals in printed and/or electronic form at the HEI's library.

9.4 Changes to the accreditation process of doctoral studies in 2009

Apart from external quality assurance of higher education, ASHE has contributed to the establishment of QA units at higher education institutions. After such units had been organised in every university/faculty, it was judged that the time was ripe for the universities to initiate the accreditation of their study programmes.

Therefore, the new Act on Quality Assurance in Science and Higher Education which came into force in April 2009 states that initial accreditation of all university study programmes shall be transferred to universities (self-accreditation). QA units at universities will organise the accreditation according to ASHE criteria.

As a control mechanism, re-accreditation of study programmes will be carried out by ASHE. Re-accreditation of doctoral study programmes will still be performed as part of the institutional evaluation and aimed at examining the improvements made with regard to the standards and criteria. In addition, the re-accreditation will be likely to strengthen HEIs' incentive to improve their QA procedures since the outcomes of the re-accreditation may have an impact on their development budgets. In that way, the most efficient parts of the HEI system will be recognised and rewarded, while the others will be encouraged for further improvement.

Chapter 10: About the role of ECTS regarding Quality Assurance of Postgraduate Education with a glance at Turkey in the Bologna Process

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Introduction

Quality assurance of education and research at undergraduate and postgraduate level is an extensive venture. Two fundamental questions to be discussed with respect to the application of ECTS can be raised. Firstly, can one be sure that the quality of postgraduate education is guaranteed through the implementation of the ECTS? And secondly, is ECTS helpful to estimate the qualitative aspects of postgraduate education? When discussing the role of ECTS in postgraduate education, not only the value that ECTS adds to the quality of study programmes should be discussed, but also some aspects that might weaken quality assurance due to the way ECTS is implemented and its overestimated role. Moreover, with respect to qualifications of students enrolled in postgraduate programmes and to quality assurance of teaching staff, the overestimated role of the ECTS may sometimes hide some prerequisites of teaching and lack of qualifications. Following the statements embedded in the context of quality assurance in the Bologna Process, this paper presents the role of ECTS in postgraduate education with a glance at Turkish universities and postgraduate education.

10.1 ECTS and internal QA of higher education institutions (HEI)

First of all, quality assurance of HEIs at postgraduate level may be comprehended with respect to the Standards and Guidelines for Quality Assurance in the European Higher education Area (ESG). The general guidelines for all aspects of internal quality assurance concern documentation, publication and publication "in a style, which is clearly and readily accessible to its intended readership", as well as the participation of all stakeholders, especially students and employers, in the planning and implementation of internal quality processes.

The amount of credits required is not only a quantitative instrument to measure the student's workload; it is also an indicator of the qualifications acquired at the end of a learning unit. Therefore, the way credits are calculated and the way ECTS is performed as a system are qualitative processes. As mentioned before, these processes should be carried out and reviewed with the participation of all stakeholders, especially students. Similarly, further questions on postgraduate education may occur in the light of some research results and empirical reports done for postgraduate education. **Firstly:** is there a common understanding among the academicians on how the real workload of an "average" postgraduate student for a learning unit or for certain aspects of the same unit should be calculated? **Secondly:** are postgraduate students aware of how the

workload of a study unit is to be calculated or measured by means of credits? **Thirdly:** are students really involved in the calculation process of the credits or in the planning and implementation stages of ECTS? And **lastly:** does the credit accumulation system lead to students increasingly "hunting" for easily attainable credits or choose teachers who give credits easier than others? This means that we might lose the genuine sense and value of learning.

ECTS credits may not show clearly and directly the extent of the actual acquired qualifications at the end of a study unit in undergraduate or postgraduate education – that is the extent of professional knowledge, professional and generic skills as well as personal and social competences of a learner. ECTS credits give an idea about how many working hours in different learning places by different learning paths could or should be required to acquire these qualifications successfully.

If we look at the credits in this way, their relationship to learning outcomes is established within Part I of the ESG. The guideline of Standard 1.2 state that the quality assurance of programmes and awards are expected to include availability of appropriate learning resources, careful attention to curriculum and programme design and content, and development and publication of explicit intended learning outcomes. In addition, formal programme procedures should be approved by a body other than that teaching the programme; programmes are to be reviewed regularly and periodically with the participation of external panel members; regular feedback should be obtained from employers, labour market representatives and other relevant organisations; students should participate in quality assurance activities; and last but not least, the most important point is the monitoring of students' progress and achievements with regard to their employability. Furthermore, the objectives of the study programme must be aligned with those of all different study units. Students should have beforehand an idea about the qualifications to be acquired in certain units according to a certain amount of work. They should get a logical overview on how qualifications are achieved in postgraduate education in comparison with undergraduate education.

On the other hand, quality assurance of teaching staff is a further criterion of internal quality assurance. Teachers have a direct influence on the student's workload through their supervising and methods of teaching. It is important that teachers have a full knowledge and understanding of the subject they are teaching and have the necessary skills and experience to transmit their knowledge and understanding effectively. Moreover, teaching staff should be eager to be assessed by students and to access feedback on their own performance.

10.2 ECTS and learning outcomes

It is obvious that ECTS makes study programmes easy to read and compare. It is also obvious that ECTS facilitates mobility and academic recognition, helps universities to organise and revise their study programmes and supports flexible learning paths. Nevertheless, one could discuss the calculation basis of credits with regard to the starting conditions and backgrounds of students in the same subject area across one or several countries. Now two questions may arise: the first question is about the required amount of time a student needs to achieve each of the learning outcomes at the end of a course. This calculation is based on the assumption that an average student needs to do a certain amount of work in a certain amount of time to acquire the required qualifications successfully at the end of a course. Due to the variety of personal skills,

habits or attitudes of learning gained from the previous levels of learning and of learners' background, the calculation of credits and the total amount of time available will probably result in a mismatch. This homogenising of learners as "average students" is problematic, especially when the quality standards of the previous education levels up to postgraduate education – which actually make up the "Input" of the postgraduate education – diverge strongly. The problem would intensify during postgraduate education if no additional tutorials or extra courses were offered in order to compensate for the skills deficit.

The second question considers the requirements, conditions and the successful achievement of personal and social skills as defined at the master or doctoral level of National Quality Framework (NQF). Apart from the challenge of formulating cognitive, affective and psychomotor learning outcomes, as well as considering requirements and conditions of their achievement, it should be asked how far we could describe or cover such learning outcomes in terms of predefined workload. Such competences and skills as team-work, working with or motivating others, written and oral communication skills, intercultural skills, capacity for ethical and ecological judgment, sense of responsibility, or ability to take stress are very dependent on the context. In other words, their achievement and use depend very much on the hierarchical situation, on the opportunities and circumstances of learning and application environment. The grade of their achievement can be then "measured" if they can be freely applied by the learners in the learning environment. On the other hand, as described in the hierarchical construction of NQF for Lifelong Learning (LLL), the professional, personal and social skills that are to be acquired at the master and doctoral levels should be based on the skills and competences achieved at the previous six levels. Therefore, the achievement of those skills is embedded in all the students' learning phases and life circumstances during primary, secondary and undergraduate education. Consequently, the question of skills achievement draws attention to the social dimension of the Bologna Process and also to the matter of lifelong learning.

10.3 The Bologna Process and the application of ECTS in Turkey

Turkey has officially taken part in the Bologna Process since 2001. Many Bachelor programmes at the prestigious universities in Istanbul and Ankara have been internationally accredited since the nineties. A growing number of Bachelor programmes at younger universities in other cities are being prepared for accreditation processes. Seventeen Turkish universities went through the "Institutional Evaluation Programme" of the EUA (2008). The national Bologna projects have been carried out with support of the European Commission since 2004. In other words, the country did tremendous progress in all action fields of the Bologna Process in the last five years.

As stated in the National QF Report, the Council of Higher Education (CoHE), which is the responsible body for higher education in Turkey, decided to set up a NQF in 2006. In order to set the agenda and organise the process, a national committee was set up by the CoHE. The Committee initially consisted of a core group of four members including one member from the CoHE, one Rector, the President of the National Commission for Academic Assessment and Quality Improvement in Higher Education (YODEK), and the Chairman of the Executive Board of a nongovernmental organisation named Educational Volunteers Foundation of Turkey (TEGV). At that stage of development, it was agreed that the definitions on qualifications and competences, which are set up at

the overarching Qualifications Framework for EHEA based on the Dublin descriptors, would be applied in Turkey. Accordingly, the Committee drafted the level descriptors compatible with those of the first, second, third and short cycles in the EHEA. In April 2007, the first cycle of consultation process started. The first draft version of level descriptors was sent to all universities and other related stakeholders (national students' unions, National Ministry of Education, NGOs business world including employers and trade associations) and relevant feedback was included in the draft. The subject was also on the agenda of the National Team of Bologna Experts and it was open to discussion in a series of meetings with participants from teaching staff of universities, students and other stakeholders. In July 2008, the number of the Committee members was increased to nine, involving more representatives of the CoHE. In addition, an advisory Working Group on NQF comprising 13 members from academic staff of universities had been established. Based on the discussions and feedback from the stakeholders and new developments in the field, both groups decided to redefine the degree structure of higher education based on learning outcomes and make qualifications and awards more transparent and conceivable within the contexts of both overarching European QFs i.e., EQF-LLL and EQF-EHEA. Since qualifications within the Turkish Higher Education System include all vocational qualifications at short cycle level – which is strongly linked to vocational education at secondary level – and some high-level vocational qualifications at first, second and third cycles, it was decided to adopt EQF level descriptors as a reference. All higher education levels have been reviewed within the EQF-LLL framework. It was also agreed within the Committee and Working Group that this would facilitate lifelong learning at every level, from primary to higher education including vocational education, and lead to a single NQF in the future.

Then, the Committee and the Working Group have started the second stage of the process with the consultation of all the stakeholders mentioned above plus the government and representatives from different sectors of business and trade unions. The consultation process, the approval according to national tradition by the minister and government and the legislation have been completed. The administrative setting up procedures for implementation will be completed in January 2010. There has already been a considerable number of higher education institutions (HEIs) or programmes within HEIs that have designed their programme/curriculum based on learning outcomes. It is envisaged that the NQF will be partly implemented as a pilot project in these programmes from different disciplines in order to demonstrate good examples by 2010, and fully implemented at all programmes in HEIs nationwide, including government and foundation HEIs by 2012. Inclusion of some qualifications (like engineering) into the NQF will start soon through already established external quality assurance procedures. Inclusion of all qualifications nationwide will be completed by 2015. Quality assurance system linking the NQF and programme outcomes through national quality assurance agencies is expected to be fully functional by 2010 and self-certification of NQF is scheduled to take place between 2010 and 2012.

Although Turkey did tremendous progress in the Bologna Process, there are still structural and teaching staff related problems to be solved. These problems could probably be observed also in some other Bologna countries. Part of them could be explained briefly by means of the application of the ECTS: Turkey has the highest score in the "Bologna Scorecard 2007" concerning the implementation of ECTS at

undergraduate level. However, this result does not mean much, unless the teaching staff takes fully the additional paths and opportunities of teaching and learning offered by the ECTS application.

ECTS credits offer in every HEI the chance to modify the classical lecture according to the calculated amount of work; that is for instance to vary the learning places and learning ways. Thanks to ECTS, students may have the chance to follow a lecture not only passively, but to learn actively through independent research work, homework to be presented in the classroom, learning in seminars, in the laboratory or in practical training. They may also experience that real and continuous success requires intense work. As a result, they may develop the ability to find creative solutions for unexpected new tasks, or they may break their habit of learning by heart.

On the other hand, these possibilities through ECTS require more work for teaching staff. However, the teaching staff in many HEIs in Turkey is often overloaded because of extra paid lecturing. Quality assurance of teaching staff looks almost exclusively at the number of international publication issued and less at the pedagogic and didactic abilities. This insufficient quality assurance measure is often increased by other circumstances that hamper the enrichment of the learning ways and places: either teachers are not enough in a study programme to hold lectures, tutorials and seminars or the laboratories and practical training places do not suffice.

Concluding remarks

There are not any research results like "Postgraduate Students Mirrors" (cf. Chapter 5) in Turkey, but there is awareness of postgraduate education problems. It is obvious that a significant amount of postgraduate students have serious professional and personal shortcomings resulting from previous studies. But the same shortcomings can also be observed amongst the supervisors because they have gone through the same study programmes about which we complain. On the one hand, there is a lack of qualified supervisors and, on the other hand, there is no official criterion to be a supervisor. In many cases, Master's or doctoral lectures are obliged to correct the learners' shortcomings brought from Bachelor programmes. For postgraduate programmes there are entrance examinations with heavy selection criteria for students, but not any binding academic criteria for jury members.

Due to the growing demand for higher education, the number of Turkish universities constantly increased in the last two years, resulting in every city having at least one "university" now. Recently founded universities are facing the big challenge of trying to meet the quality assurance criteria for higher education while completing the teaching staff and learning environment facilities. If we keep on considering that learning does not only happen in the formal education institutions, but also in many life circumstances, the Turkish politicians should tackle the tremendous task of further modernising life environments in order to improve the informal learning settings as well. As shown in the Pisa study of 2003, even a correct implementation of ECTS in postgraduate education does not solve the problems related to quality and accumulated in the primary and secondary education in Turkey. To achieve quality in primary and secondary education, further improvements are needed in a wider context with respect to the education of teachers and pupils' life circumstances.

Conclusion

Nathalie Costes, Project Manager, ENQA

Assuring quality of higher education is an arduous undertaking, especially when it comes to postgraduate education and research. This is due to several reasons highlighted in this report, which also provides some recommendations and examples of good practice. This conclusion summarises the main points brought up in the workshop and by the authors of the present publication.

As outlined in Chapter 7, quality assurance of postgraduate programmes offers advantages, both for institutions and students. But this evaluation exercise is not without difficulties.

The first and main challenge arises from the specificities of the third cycle. Following the standardisation of procedures at Bachelor's and Master's levels, standards at doctoral level have also started to be implemented. However, one should bear in mind that the standards used for the first two cycles cannot be automatically applied to doctoral education owing to its own features. It is important that PhD programmes and quality standards of doctoral education are linked to and in accordance with the traditions of the discipline and the university's mission, functions, and strategy on doctoral education. Consequently, quality standards of doctoral education should be kept basic and generic for every PhD programme so that they can adjust to the varied institutional contexts.

At the same time, while the third cycle is significantly different from the first and second cycles, mainly due to the research element, these three cycles cannot be taken separately. As mentioned in several articles of this report, the Master's degree is the main gateway to the third cycle in most European countries, and as such, has serious consequences on doctoral education. However, the Master level still differs greatly from country to country across Europe in terms of content, implementation and understanding of its role and value. This results in Master's graduates not having the same starting point for postgraduate education. Therefore, better comparability between Master's programmes and a clearer perspective on these, including research Master's programmes, need to be achieved.

The organisation and provision of postgraduate research education differ around the world. Compared with Bachelor's and Master's programmes, PhD programmes greatly vary in terms of demand, structure, form of organisation and funding. This explains why specific evaluation procedures and standards need to be established for doctoral education. The workshop participants acknowledged that this large diversity makes internal and external evaluations very complex, but should be taken into account in the review process. This report suggests that the structure of doctoral schools – although not being the best or only way to organise doctoral education – makes it easier to monitor doctoral studies and achieve quality assurance. Regular assessment of doctoral students within the schools was also mentioned as a key to success.

As mentioned above, the primary component of doctoral education is research performed by doctoral candidates. Therefore, evaluation of doctoral programmes includes both the quality of doctoral training and the quality of research. The participants lengthily discussed how QA agencies can evaluate, measure and guarantee

the progress of students' work and scientific contribution, and the recognition of students' merit. Being a creative process, quality of research is not easy to evaluate. Research quality "should be obtained through an assessment of commensurable procedures and criteria on each layer of the institution". As highlighted in this report, the European Credit Transfer System (ECTS) is not an appropriate tool for doctoral education. Quality of postgraduate education is not guaranteed through the implementation of the ECTS, but through an external review assessing the quality of the research work and the qualitative aspects of postgraduate education. Quality of the research work also depends on the application of ethical standards, which is regarded as a quality issue, as shown in the Postgraduate Students Mirror 2008.

Other crucial, and most critical, elements of doctoral education extensively examined at the workshop were supervision and mentoring. During their research studies, doctoral candidates are in close relationship with, and depend to a great extent on their supervisors. Therefore, a good relationship between the candidate and his/her supervisor, and outstanding supervision will often determine the successful completion of a PhD programme. This obviously requires that supervisors are appropriately trained to perform their responsibilities to a high standard and have a low number of candidates to oversee. QA agencies are facing the main challenge of how to measure, evaluate or guarantee the quality of human relationship. This question remained open at the workshop. In quantitative terms, an adequate amount of supervision should be provided. At the moment, there are no rules in this regard. It was also suggested that there should be internationally endorsed eligibility criteria for supervisors.

Another important aspect to be considered at the doctoral level is access to knowledge. In order to reduce inequalities, the selection procedure should "allow equal access for all applicants, be transparent and connected with the institutional strategy on access". It should also look at academic and personal aptitude and performance.

In conclusion, and as mentioned in Chapter 1, careful attention should be given to the issues of equity, quality, relevance, ownership and international networking, as they still constitute the main challenges for postgraduate education.

Annex – Programme of the workshop

ENQA Workshop

QUALITY ASSURANCE IN POSTGRADUATE EDUCATION
March 12–13, 2009

Hosted by the Romanian Agency for Quality Assurance in Higher Education (ARACIS)

Venue:
Transilvania University
Aula universităţii/University Aula
Str. Iuliu Maniu 41A
Braşov, Romania

PROGRAMME
WEDNESDAY 11 MARCH, 2009

14:00   Arrival in Bucharest, transfer from Bucharest – Henri Coandă (Otopeni)
airport to Braşov and accommodation at Hotel ARO Palace

Afternoon registration of participants:
Transilvania University, Brasov, Rector's Office, B-dul Eroilor nr. 29; or directly
at Hotel ARO Palace, Braşov, B-dul Eroilor nr.27
(walking distance from the Rector's Office)

20:00   Welcome dinner offered by ARACIS at Hotel ARO Palace

DAY 1
THURSDAY 12 MARCH, 2009

7:45   Bus transfer from Hotel ARO Palace to workshop venue

8:00   Registration of participants

9:00   **Welcome**
Radu Damian, Head of Quality Assurance Department, ARACIS
Bruno Curvale, President of ENQA
Ecaterina Andronescu, Minister of Education, Research and Innovation
of Romania

Chair: Radu Damian, ARACIS

9:30   **Plenary session:**
Overview of developments of Master and Doctoral education in Europe and beyond

"Forces shaping postgraduate education: academic credentials in a global context"
Mary-Louise Kearney, Director of the UNESCO Forum on Higher Education, Research and Knowledge

QA in doctoral education – an overview of different approaches in a sample of selected countries
Lesley Wilson, Secretary General, EUA

Discussion

Chair: Radu Damian, ARACIS

10:45   Coffee break

11:15   **Panel discussion: QA in postgraduate education from the HEIs', doctoral candidates', and quality assurance agencies' perspective**
Janet Bohrer, QAA, UK, part-time professional doctoral candidate (EdD); Lesley Wilson, EUA; Karoline Holländer, Eurodoc; Ligia Deca, ESU; Dan Popescu, University of Craiova

Discussion

Chair: Bruno Curvale, ENQA

12:30   Lunch at the workshop venue

13:30   **Plenary session: three case studies**
- **Postgraduate survey 'A Mirror for Postgraduate Students' in Sweden,** Gunilla Jacobsson, NAHE
- **Research Masters in the Netherland**s, Fred Mulder, NVAO
- **Accreditation of PhD programmes in Lower-Saxony, Germany,** Manuel Pietzonka, ZEvA

Discussion

Chair: Emmi Helle, ENQA

14:30 **Parallel working group sessions**
- Doctoral education: How does it differ from the first and second cycles (i.e. the main component of doctoral education is original research and contribution to the new knowledge)? What are the consequences for agencies' QA procedures? *(facilitator: Lesley Wilson, EUA)*
- Doctoral education and employability: What procedures should QA agencies use to assess whether doctoral programmes provide doctoral candidates with professional and transversal skills in order for them to become competent and independent researchers employable in a wide range of sectors of economy and society? *(facilitator: Bruno Curvale, ENQA)*
- Supervision and assessment: How can QA agencies evaluate, measure and guarantee the progress of students' work and scientific contribution, the recognition of students' merit and a satisfactory and balanced relationship between doctoral candidates and supervisors? *(facilitator: Radu Damian, ARACIS)*

16:00 Coffee break

16:30 **Plenary session**
De-briefing from working groups

Chair: Nathalie Costes, ENQA

17:30 **End of the first day**

17: 45 Bus transfer to Hotel ARO Palace

19:15 Bus transfer to restaurant

19:30 Dinner at restaurant Cetate

DAY 2
FRIDAY 13 MARCH, 2009

8:30 Bus transfer from Hotel ARO Palace to workshop venue

9:00 **Plenary session: national experiences**
External evaluation of Master programmes in Romania,
Radu Damian, ARACIS
Accreditation of doctoral schools in Hungary, Judith Negyesi, HAC
Evaluation of doctoral schools in France, Jean-François Dhainaut, AERES

Chair: Emmi Helle, ENQA

10:00 Coffee break

10:30   **Parallel working group sessions**
- Internal institutional QA procedures and trends in European doctoral education *(facilitator: Lesley Wilson, EUA)*
- External QA and assessment of doctoral programmes in Europe: current practices and challenges *(facilitators: Manuel Pietzonka, ZEvA and Bruno Curvale, ENQA)*
- Organisational trends in doctoral education: the introduction of doctoral schools either at institutional level or across institutions on a thematic basis *(facilitator: Jean-François Dhainaut, AERES)*

12:00   **Plenary session**
De-briefing from working groups

Chair: Nathalie Costes, ENQA

12:30   **Closing plenary session: Conclusions and foresight**
Radu Damian, ARACIS, and Bruno Curvale, ENQA

13:00   Lunch at the workshop venue

14:15   End of the workshop

14:30   Bus transfer to Hotel ARO Palace

Transfer from Braşov to Bucharest – Henri Coandă (Otopeni) airport

Optional

15:30 – 18:00 Guided tour of Braşov or shopping time

18:30   Bus transfer to restaurant

19:00   Dinner at restaurant Poiana

SATURDAY 14 MARCH, 2009

Transfer from Braşov to Bucharest – Henri Coandă (Otopeni) airport

The present report follows an ENQA Workshop on Quality Assurance and
Postgraduate Education, hosted by the Romanian Agency for Quality Assurance
in Higher Education (ARACIS) in Brasov, Romania on 12–13 March 2009.
The workshop was an excellent opportunity for ENQA members to exchange
information, define concepts and examine best practice related to quality
assurance of postgraduate education.

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