The Place and Role of Doctoral Programmes in the Bologna Process

SUMMARY

Europe has world-class research universities with outstanding scientific and technological expertise. They are constantly adapting to processes and new discoveries, have undergone a trans-disciplinary revolution and are committed to innovation processes. They have strong industry links, and entrepreneurialism is increasingly embedded in their programmes and they are magnets for talented students and researchers. The societal contribution of research universities is and becomes increasingly crucial as the knowledge economy develops. They are the most efficient locations for basic research and are key catalysts for innovation, in collaboration with partners in industry, research facilities, government agencies, etc.

Europe's rich cultural heritage, its social model, its diversity, and its unique combination of rich academic traditions and high-quality research offer a unique set of opportunities to researchers. To ensure that Europe develops into a powerful knowledge-based economy, it needs knowledgeable and creative citizens in an environment of opportunity combined with responsibility. This means broad access to higher education, and a social dimension to add to the attractiveness and competitiveness of a European Higher Education Area (EHEA) and the European Research Area (ERA).

The Coimbra Group Universities have always been catalysts of cultural vitality, and they are strongly committed to enhancing the capacity of the research universities and to contributing to a globally competitive innovation of the European economy. This is the background for and *raison-d'être* of the Coimbra Group Universities' strong commitment to the doctoral degree.

1. High quality doctoral training can only be provided in high quality research environments, such as research universities with strong credentials in academic research, where it is possible for doctoral students to be members of research groups, benefit from research schools and a critical mass of researchers.

2. There should be only one doctoral degree. The quality requirements defined for candidates, doctoral training, supervision committees, theses and the defence should be the same for all doctoral students regardless of their research orientation.

3. The admittance level required for doctoral programmes must always be at a high internationally recognised academic level. While a preceding master degree is often the standard model, universities can define other admittance levels.

4. Full-time doctoral programmes are normally of 4 years' duration.

5. The doctoral thesis should be submitted for oral defence. At least one of the examiners on the evaluation committee should be from outside the university, and preferably from another country.

6. Only universities can award doctoral degrees.

INTRODUCTION AND BACKGROUND

This statement sets forth the views of the Coimbra Group Universities on the essential characteristics of doctoral degrees and the education of new generations of researchers. The thirty-seven long-established, multidisciplinary European universities that constitute the Coimbra Group are research universities of a high standing at national and international levels. With the progress of the Bologna Process following the Ministerial meetings in Berlin and Bergen, to incorporate the third cycle in the architecture of the EHEA, the Coimbra Group wishes to draw the attention of Education Ministers to the experience of Coimbra Group members by underlining the specificity of the doctoral level as one of the most important links between the EHEA and the ERA.

As a group, the Coimbra Group Universities create an intellectual landscape that is rich in terms of scientific expertise and diverse in terms of disciplines and methods. In addition, their long tradition of educational and scientific exchanges guarantees dissemination of newly created knowledge to other universities and to society as a whole. By stimulating networking among universities, strong links are forged and new co-operation opportunities open up which enable researchers to move freely.

More than ten thousand new researchers leave the Coimbra Group Universities every year with a doctoral degree to make their significant contribution to European research. Together with basic and applied research results and discoveries, they are the most important contribution to innovative research provided by the European universities. They are trained to the highest academic level and have proved themselves by meeting the high quality criteria of their universities in their successful efforts to produce original research. It is, in particular, this high level of quality which is at the root of the doctoral level discussions: the doctoral level has a special character compared to the first and second cycles in being research training and therefore cannot be seen as yet another study level[1]. To ensure that the doctoral level can function convincingly and productively as a link between the EHEA and the ERA, this special character of the doctoral level needs to be taken into consideration and taken seriously. This distinction is imperative to the Coimbra Group Universities.

One of the acute questions certain to arise in connection with defining the doctoral level as a cycle with its own special character will be the question of recognition measures, not only in connection with exchanges of researcher students across borders but also in relation to sector mobility. To the Coimbra Group this is a question of quality assurance offered by the degree-awarding universities. The need for the doctoral level qualifications "to be fully aligned with the EHEA overarching framework for qualifications using the outcomes-based approach" does not necessarily entail the introduction of measurable entities or modules, but should instead acknowledge the definition of quality outcome at the doctoral level by the degree-awarding universities.

OPERATIONAL CONSIDERATIONS

1. Terminology

The doctoral degree provides the candidate with skills and knowledge at the highest internationally recognised academic level of the relevant discipline or disciplines. It is aimed at providing the candidate with a profound understanding of the methodological and theoretical basis of the acquired knowledge and with the ability to conduct independent research. The predominant component in the doctoral degree is research training. A doctoral study programme can contain coursework elements, training in transferable skills and obligatory teaching elements. The award of a doctoral degree provides a guarantee of the candidate's ability to operate with dissemination and valorisation of scientific knowledge, undertake independent research and provide research-based teaching up to the master level.

1. This is clearly reflected in the varying definitions of the status of doctoral students in Bologna Process countries. A definition of status, however, is not incorporated in this paper, as it does not reflect on the contents and quality demands of the doctoral degree.

2. Access

Access requirements for doctoral programmes must follow objective and transparent criteria. Doctoral admittance committees assess the academic qualifications of applicants to ensure that they can complete the doctoral programme within the allowed time frame. The admittance level required must always be at a high internationally recognised academic level. As a general rule, applicants with a master degree in a subject relevant to the doctoral project will be able to apply for a doctoral programme. However, depending on the country and the university other entrance criteria may be defined, e.g. a 3-year academic bachelor degree with a high class honours degree.

It is important that admission criteria are not too narrowly defined with respect to the subject/discipline since this would restrict cross-disciplinary transitions between master and doctoral programmes. Integrated master/doctoral programmes offer advantages in terms of study time calculated, but from the point of view of mobility and trans-disciplinarity it is recommended that entrance criteria to doctoral programmes be sufficiently flexible to allow master students to switch to other institutions/programmes for their third degree.

3. Doctoral Programmes

Full-time doctoral programmes are normally of four years' duration. The main content of the study programme is independent research under academic supervision from one or more experienced researchers. Teaching must be predominantly research-based and contain instruction in basic research methodology and research skills. It is the aim of doctoral study programmes to provide the doctoral student with the skills necessary for him or for her to engage in independent, critical knowledge production based on the relevant methods of research and documentation. The doctoral student will have to prove an independent research capacity of his or her own as well as be able to critically assess research methodologies and results from other researchers.

Doctoral programmes can contain varying combinations of taught courses (mandatory or voluntary), training and research. The research component of the programme is performed by the doctoral student with a large degree of autonomy, but under supervision of at least one recognised, active researcher and, as a minimum, should be of 2.5 years in duration, including the thesis work. Taught coursework and training can focus on core research skills within the relevant discipline and on transferable personal skills. Supervisors should have extensive knowledge and research experience at a sufficient international academic level relevant to the doctoral student's field of study. The supervisors have the responsibility to create a stimulating environment in terms of intellectual challenge, methodological approach, international contacts, and financial support for the doctoral student.

It is essential that the doctoral student be provided with enough time to conduct individual research and to develop personal research skills. It is the obligation of the supervisor and of the degree-awarding university to secure sufficient time to develop personal research skills and work on the thesis. It is thus important that the time dedicated to mandatory teaching duties and to other work is limited and clearly defined, and that the progress of the individual study programme is monitored with a view to the conclusion of the thesis and the oral defence.

For doctoral students who participate in research groups or who work with their supervisor(s) the group should develop a protocol defining the contribution to the hypotheses, data and research findings of each individual member. The intellectual property rights to the research results of the thesis work should be clearly defined.

Doctoral study programmes must provide sufficient opportunity for the doctoral student to engage with the methodologies, results and debates of the international academic research environment of the relevant discipline(s). Doctoral training is *per se* of an international nature.

Doctoral programmes may take various forms, ranging from the traditional academic research-based doctoral training programme to more applied research doctoral projects where part of the research input may come from professional activities and experiences outside the traditional research environment, thus generating professional experience as an integral part of the research process. The latter are known as “professional doctorates” predominantly awarded in the Anglo-Saxon tradition, with a clear lifelong learning perspective, or the industrial doctorate, which has become increasingly relevant as science parks, incubators and other university-industry collaborative efforts have opened up and emphasised areas of interest to future researchers. Different kinds of division of labour can be envisioned between an academic supervisor and external co-supervisors. The main supervisor should be a recognised, active researcher with academic credentials and affiliation to a university. The responsibility for evaluation, examination and the defence rests with the university. Only universities can award the professional doctorate.

4. Institutions

Doctoral training is the sole responsibility of universities. It is the responsibility of the degree-awarding institution to secure that aims and quality criteria of any given doctoral programme as well as the legal regulations of the programme are established unequivocally. Universities engaged in joint degrees must establish aims, quality criteria, and the regulatory basis of the programme before the beginning of the training for the joint degree. The responsibilities of supervision, evaluation and examination for joint degrees should be established before the beginning of any individual doctoral study. The universities guarantee that research training and supervision take place within the context of well-established international research environments, cf. the *Codes of Practice* already established in some countries.

5. The Thesis

In order to receive the doctoral degree doctoral students have to prove their ability to perform original and independent research at the highest international level within one or several related scientific disciplines. These abilities are primarily demonstrated through researching for, writing and defending a doctoral thesis. The thesis can have a number of forms. It can be a traditional monograph or it can be a collection of interrelated manuscripts. The minimum characteristics of the thesis are that it must focus on clearly defined subjects, be based on one or more clearly identifiable scientific disciplines and methodologies and that its results are based on and documented by independent, original and thoroughly tested research findings. The thesis is based on original research performed under supervision, but with a certain level of autonomy. In case the doctoral research is part of a collaborative project, the contribution of the individual doctoral students should be clearly defined.

6. The Defence

Pending satisfactory passing of the requirements of the doctoral programme the thesis is submitted to a board of experts preferably chosen within an international context and within the relevant fields for evaluation. At least one of the examiners should be from outside the university and, preferably, from another country. The thesis is eventually submitted to an oral defence. Examination procedures should be based on objective, transparent criteria. The oral defence may be public, while the evaluation of the thesis and of the oral defence takes place in closed chambers.

7. The Degree

Only universities can award the doctoral degree.