

Preface – and Introduction to Theme

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The current European scene of policy debate on higher education and science is delineated by two pan-European initiatives – the European Higher Education Area (EHEA) to come into being by the year 2010, and the European Research Area (ERA), the development of an optimal research environment to make Europe the leading knowledge-based economy.

To a great extent the two “Areas” are viewed as convergent in certain respects, and the issues related to the education, training, and development of “human resources”- Doctoral studies and qualifications included - are rightly viewed as bridges between the European Higher Education Area and the European Research Area. Increasingly, these issues are going to be part of the debate on the future development of higher education and research in Europe. Held in September 2003 in Berlin, the conference of Ministers responsible for Higher Education confirmed the necessity “... to include the Doctoral level as the third cycle in the Bologna Process”, in the wake of the Bachelor and Masters’ cycles.

A number of voices have been drawing attention to the need for a greater number of researchers in Europe - a massive shortage of manpower varying reportedly between 600,000 and 800,000 scientists across the European Union. One of the most eloquent of these voices is Philippe Busquin, European Commissioner in charge of research, who has repeatedly argued that “Europe more than ever needs research”; it is a matter of “economic survival” due to the fact that “half of [the economic] growth is being obtained through innovations”¹. Various “innovation scoreboards” convincingly illustrate a European weakness in the global knowledge-driven technological competition, and not only as a result of under-funding.

It is abundantly clear that research carried out in higher education institutions and academic organizations becomes an integral part of the innovation chain; and only such institutions involved in educating and training future scientists can provide a realistically adequate setting to respond to the above challenges. This is in addition to the ongoing need for

¹ “Un entretien avec le commissaire européen chargé de la Recherche - L’Europe a plus que jamais besoin de recherche”, *Le Figaro*, 31 January – 1 February 2004, p. 19. For a comprehensive analysis and programmatic formulation of the position of the European Commission see two documents, Communication from Commission – The role of the universities in the Europe of Knowledge. Brussels: Commission of the European Communities, 5 February 2003 and Communication from the Commission to the Council and the European Parliament – Research in the European Research Area: One profession, multiple careers. Brussels: Commission of the European Communities, 18 July 2003.

“reproductive” training, namely of the next generation of university teachers and researchers.

This policy context has drawn increasing attention to a whole range of issues confronting European science, including those related to Doctoral study programmes and the awarding of corresponding degrees and qualifications. For non-European Union countries, additional challenges associated with the consequences of transition [to post-communism for example] include massive external and internal brain drain, a rapid drop in funding levels, inefficient organizational structures, and the threat of unethical conduct by both students and academics. In some countries, the situation has been further aggravated by ethnic conflict.

While considering such developments and challenges, it should also be pointed out that the awarding of “Doctoral qualifications” is intrinsically linked to the history of universities. Take for instance, as a symbolic illustration, the ceremony of awarding a Doctoral qualification and title, and its corresponding privileges, which are as impressive as they are elaborate. Such decorum has a certain rationale, resulting as it does from careful scrutiny, rules and decisions as to who is awarded a qualification and on what basis. These questions are no less valid today than they were in the past; in fact since Doctoral degrees are now almost entirely “research-dependent”, this problem is particularly pertinent. It is quite typical that the award of the Doctoral degree requires successful preparation, and defence, of work meeting the following three main conditions:

- It represents an original solution to the research problem;
- There is a proven record of sufficient knowledge within a given scientific discipline;
- There is proven ability to conduct independent research within a given scientific discipline.

In addition to intellectual capacity, appropriate research training is a lengthy process of self-education, experimentation, and “helpful guidance” from what in the old German universities was described as *Doktor Vater* - nowadays a Doctoral Supervisor or Doctoral Committee. In a more emblematic way, this has also been described by John Ziman, Professor Emeritus at the University of Bristol: “The heart of the PhD experience is the psychological transition from a state of being instructed on what is already known to a state of personally discovering things that were not previously known”². Unless this conversion occurs, it is difficult to expect wholly qualified and capable researchers. It is this very transition which so precisely distinguishes “Doctoral studies” from study programmes at the preceding levels and which poses significant problems with regard to its organization.

² John Ziman, “Competition undermines creativity”, *The Times Higher Education Supplement*, 16 July 1993, p. 16.

While the intrinsic, intimate question of scientific maturing was and remains valid, it is nevertheless important to consider Doctoral studies and degrees in the context of the current environment of higher education and science. This was the climate in which UNESCO-CEPES and the Elias Foundation of the Romanian Academy initiated a project leading to the International Seminar on Doctoral Degrees and Qualifications in the Contexts of the European Higher Education Area and the European Research Area, held in September 2003 in Bucharest.

In order to conduct well-informed discussions at the meeting, thirteen national case studies were commissioned covering the following countries: Austria, France, Germany, Italy, the Netherlands, Norway, Poland, Romania, the Russian Federation, Spain, Sweden, the United Kingdom, and the United States. These countries were selected in order to present a fairly wide range of situations, organizational approaches, policy initiatives, and academic traditions with regard to the structure and awarding of Doctoral degrees. The case study about Doctorates in the United States is relevant in that this country is referred to, sometimes with envy, as a model to be followed.

Beginning with information about general trends and legal and institutional arrangements, the case studies go on to analyze in detail some problems of particular relevance:

- The place of Doctoral studies in the overall structure of programmes offered by higher education institutions;
- The status of persons undertaking studies and research leading to Doctoral qualifications: are they still students, or already researchers?
- The role of institutions other than those of higher education, bearing in mind that in a number of countries Doctoral qualifications can also be earned in academies of science or other research organizations - including the evaluation of Doctoral degrees and qualifications obtained abroad;
- The procedures for the award of Doctoral qualifications, and the role of external bodies in validating them;
- The costs of the research generally required for the award of Doctoral qualifications.

In addition to the national case studies, Professor Barbara Khem of the Centre for Research on Higher Education and Work at the University of Kassel, Germany, has been invited to undertake a comparative analysis of the results. This has been done in order to identify the main challenges and trends in the development of Doctoral studies, particularly from the perspective of the Bologna Process requirements.

The topic of Doctorates is a recurrent subject of interest for UNESCO-CEPES. Ten years ago, UNESCO-CEPES published the results of a very comprehensive study covering 31 countries in the Europe Region; its purpose was to provide a description of the requirements and formal

conditions for awarding Doctoral degrees.³ One of most evident changes since this time is that a number of European countries have dropped “second Doctor’s degrees” - Doctor of Sciences or Habilitation - as prerequisites for an academic career.

On the whole, studies leading to Doctoral degrees in many European countries are presently facing a paradoxical situation. On the one hand there is a general decline of interest in such qualifications among graduates, who view them increasingly as strictly necessary only for an academic career. On the other hand, the reality of knowledge-based economies and a developing “European Research Area” implicitly require consistent, high quality Doctoral-level studies as well as funding schemes for Doctoral and post-Doctoral research projects. A further area of concern is naturally the age-structure of current teaching and research staff in European higher education institutions.

When compared to other programmes, particularly those of leading universities in the United States, a series of problems with European Doctoral degrees is surfacing: dysfunctional relations between various systems; inconsistent standards regarding admission requirements, teaching periods, and theses; and weaknesses in the assessment and control of both quality and relevance.

The amount of individual input needed for successful completion of Doctoral studies, at times competing with professional and personal obligations, is only one cause for attrition. The others may be found “... within the organization and conduct of Doctoral degree programmes”⁴. In this respect the findings of a poll conducted in Poland showed that more than half (52.4 percent) of those participating in Doctoral programmes were facing substantial difficulties related to the following:

- The chosen topic of research for the thesis (20.9 percent);
- Too heavy a teaching load (9 percent);
- Poor relations with supervisors (7.5 percent);
- Poor organization of the Doctoral study programme itself (7.5 percent);
- Other problems directly related to institutional conditions (6 percent).

While percentages may differ, the above problems can most likely be found in any other jurisdiction.⁵ To these are added further problems for

³ Oleg Kouptsov, ed. *The Doctorate in the Europe Region*, UNESCO-CEPES Studies on Higher Education. Metropol: Bucharest, 1994.

⁴ Małgorzata Dabrowa-Szefler, *System kształcenia doktorantów w Polsce - próba oceny na podstawie badań ankietowych* [System of Doctoral Studies in Poland - Preliminary Analyses of Poll Data], *Nauka i Szkolnictwo Wyzsze*, No. 1, 2001, pp. 62-76.

⁵ In addition to psychological hardship due to the prevailing solitude of PhD projects, the author, a Senior Lecturer at the University of Coventry, draws particular attention to the financial hardship of doing a PhD and the need for guidance and mentoring in the organization of PhD studies in the United Kingdom. See, Katharine Sarkakis, “Why I Believe PhD Students Should Be Paid to Study”, *The Times Higher Education Supplement*, 14 May 2004, p. 14.

those who want a period of study abroad, as young researchers who try to develop their qualifications abroad encounter financial, administrative, and social/cultural obstacles.

In order to deal with such problems, certain initiatives have been already proposed. Some European universities have established centres of excellence, Doctoral schools, thematic European Doctoral programmes, and specific incentives for Doctoral/PhD students. Nevertheless more has to be done, and consequently in-depth knowledge of the complex changes in structure and content is necessary.

The diversity of paths leading to a Doctoral degree, combined with the specificity of each national system of higher education covered in this volume, posed a particular set of terminological and editing challenges. These were ably met by Leland Barrows, who recently retired from his position as Senior Editor, here at UNESCO-CEPES.

The accuracy of the information and analyses provided benefited not only from the discussions at the International Seminar on Doctoral Degrees and Qualifications in the Contexts of the European Higher Education Area and the European Research Area, but also from a peer-review to which were subjected all national case studies.

In summary, this volume provides a very solid and updated base of information on principal developments regarding Doctoral and post-Doctoral programmes in the Europe Region. The book will prove an essential reference for discussions concerning the modernization of this area of higher education and, needless to say, this question is vital to the future of higher education and science. Who is and will be engaged in teaching and research, the twin pillars of higher education? Both have direct bearing not only on higher education and science but, not to a lesser extent, on technological and cultural advancement.

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