

DOCTORAL SCHOOLS – A NEW APPROACH IN QUALITY ASSURANCE OF DOCTORAL STUDIES

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Abstract

Doctoral studies are a priority of both science and education, as they influence the general level of knowledge, enable rapid technology advancement and the development of society as a whole. Considering Salzburg principles defined in Bologna Process (2005) and Salzburg Recommendation (2010) as guiding basis for all activities related to doctoral studies, trends in quality assurance of doctoral studies in the European Higher Education Area are presented, underlining the methodologies of evaluation and monitoring of the quality of doctoral studies, the supervision/mentoring quality assurance, as well as the career development of doctoral students as the milestones in achieving the basic goals of the PhD cycle. A presentation of doctoral schools as a structure in EHEA offering new possibilities in the development of doctoral studies in accordance with the given criteria is given. The role of doctoral schools in the creation of an adequate research environment is emphasized, including the achievement of a critical mass of researchers and new possibilities for learning transversal skills. Possible advantages and modalities of introducing Doctoral Schools in HE in Serbia, as considered within the scope of the Tempus RODOS Project, are presented.

Introductory remarks

European University Association (EUA) defined as one of the main priorities dating from 2003 that "linkages between the European Higher Education Area (EHEA) and the European Research Area (ERA) be strengthened, with the aim of increasing European research capacity and improving the quality of European higher education". The consecutive actions focused primarily on the crucial role of doctoral studies and the mission of universities, whose primary responsibility is creating an environment where young researchers are educated through their research activities.

Doctoral studies are substantially different from the first two cycles of higher education, as they are based on research activities that are aimed at achieving original scientific results, assuring diversity and creating a research environment of high quality, which includes critical mass, transparent admission and high quality supervision. The objectives of the 3rd cycle could be realized by flexible structures that will provide researchers in early phase a wide range of opportunities for personal and professional development, as well as institutional support for career development and mobility. Doctoral School is a recognizable label in EHEA for new institutional structures that comprehend such an approach, underlining the responsibility of institutions to provide support for high quality research and professional development of doctoral candidates. Common priorities for doctoral schools with different organizational statures include development of coherent systems for quality assurance in doctoral studies based on diverse institutional missions and research strategy, supervision culture as one of milestones in guiding young researchers in developing awareness about skills attained through research, as well as by offering of the wide range of training in transferable skills crucial for future career choices. Connection with other sectors outside academia during the PhD studies contributes to bridging the communication gap with potential employers.

Tempus RODOS Project is focused on restructuring doctoral studies in Serbia, encompassing the analysis of both European trends and experiences gained in Serbia after introducing doctoral studies (Law on HE, 2005). In the analysis of European experiences in introducing doctoral schools, the basic principles of Doctoral Programmes for the European Knowledge Society (Salzburg Principles 2005, Salzburg Recommendations 2010) were considered as the leading lines, focusing on *doctoral training as the advancement of knowledge through original research, but also underlining appropriate professional career development opportunities*. The experience of doctoral studies in Serbia has been analyzed based on an overview of both quantitative and qualitative indicators.

Analysis of European Experiences

Doctoral schools were initially established in Denmark and the Netherlands, and the German Research Foundation started to fund Research Training Groups with the specific aim of moving away from a highly individualized model based on the personal model of master-apprentice between a supervisor and a candidate. The goal was to enhance the institutional responsibility with regard to the integration of doctoral candidates in a research environment beyond the activities of their supervisors and to facilitate interdisciplinary research groups. The concept was developing in the past period, doctoral school being already a recognizable label in EHEA.

In structuring the analysis of European experiences in introducing doctoral schools, the basic principles of Doctoral Programmes for the European Knowledge Society (Salzburg Principles 2005 [1], Recommendations 2010 [2]) were considered as the leading lines, focusing on doctoral training as the advancement of knowledge through original research, but also underlining appropriate professional career development opportunities. The rich diversity of doctoral programmes in Europe – including joint doctorates – as a strength which has to be underpinned by quality and sound practice, was the leading line in the analysis performed, as well as in structuring possible ideas to implement of new structures, such as Doctoral Schools in Serbia.

Based on the analysis of doctoral schools in HE systems in the European countries (France, Belgium, Austria, Germany, Hungary, Estonia, Spain), showing different structures and organisation of doctoral schools, as well as examples of international joint doctoral programmes, the approach of *harmonization versus standardization* was underlined, defining the overlapping areas of interest, targeting especially quality and efficiency of study and employability of PhD graduates/young researchers. The experiences and examples of practice of EU Tempus RODOS Project partners were an important part of the analysis, enabling direct exchange of experiences and detailed insight into practical examples. The crucial role of supervision and assessment, transparent contractual framework of shared responsibilities between doctoral candidates, supervisors and the institution; achieving critical mass of resources, increasing mobility, sustainable funding were among the key words incorporated in the concept of Doctoral Schools introduced. EUA Trends analysis results were considered as well, showing that the general idea of doctoral schools as a relatively new structure is well accepted in European HE (increase of the number of HE institutions with at least one doctoral school from 25% to 65% in 37 countries being included in the analysis in the period 2007-2010, the Project ARDE [3]). The role of doctoral schools in the creation of an adequate research environment has been emphasized, including improvement of research excellence and research environment by the establishment of a critical mass of resources, increasing national and international mobility and new possibilities for learning transversal skills crucial for professional career of doctoral students.

Analysis of Doctoral Studies in Serbia

The starting point of the analysis was based on the comprehensive overview of the experiences in III HE cycle of PhD programmes in Serbian universities since their introduction (2006). The analysis on the doctoral study level in Serbia, performed within the RODOS Project and published [4], gave a comprehensive overview of analytical data and the quality assurance procedures and standards. Very shortly summarizing the basic findings and consecutive challenges as the leading points for comparison with European experiences in the implementation of doctoral schools, the following data are illustrative: considerable quantitative changes in PhD cycle (1.000 students in 2007/8 to almost 10.000 in 2012/13), with 4,6% of PhD student in overall student cohort; 258 PhD study programs accredited at 17 universities (119 faculties), with possibility of enrolment of 3.945 students; considerable number of the study programs being accredited for less than 10 student cohorts; enrolment reaching 60% of the overall accredited capacity, with relative domination of social sciences & humanities and medical field in comparison with technical and natural sciences; 60% of students complete studies in 5 years (3 years mostly decelerated); 30 % of students meet the mentor less than once per month (based on a PhD student questionnaire). A complementary analysis of science in Serbia [5] gave additional data on the overall research environment crucial for quality of the PhD cycle.

The results of the analysis raised at least the following opened questions and dilemmas: is the overall structure of PhD studies in accordance with national priorities/policies in economy and technology development: are considerable quantitative changes followed by adequate quality culture and quality assurance procedures and standards both at institutional and HE system level; is the *research environment vs fragmentation* adequate in matching European standards; what is the quality of mentorship and monitoring of student progress leading to more efficient completion of the PhD studies; to what extent are the students within the framework of PhD study programmes prepared for future professional carriers, especially concerning transferable skills; what is the prospective employability of PhD graduates; how to promote the PhD cycle in wider society developing adequate framework for continuous interaction of employers/labour market. The analysis pointed out the importance of national and international cooperation, especially in the context of new structures of doctoral schools, the advantages being considered as the segment of the performed analysis. Summarizing, it could be concluded:

Doctoral study cycle contributed to the positive trend in the increase of research potential;

The quality system and continuous monitoring of the results are key factors for quality enhancement in doctoral studies;

The quality of a supervisor's work is highlighted as one of the key success factors of doctoral studies in surveys conducted among students;

A considerable fragmentation of PhD study programs does not provide an appropriate research environment;

Greater opportunities for acquiring transferable skills would represent a significant step forward in supporting students in their future professional carriers;

Transparency in the process of preparing, evaluating and defending doctoral theses is one of the key elements of the quality system and quality culture;

The new system of funding doctoral studies, with special emphasis on research funding, requires an additional analysis, particularly bearing in mind the Strategy for Higher Education Development in Serbia until 2020 [6].

Doctoral Schools in Serbia – New Structure in Resolving the Challenges

Based on both European and Serbian experiences, Doctoral Schools could be considered as an institutional organisational unit which could contribute in further development of doctoral studies in the context of the challenges defined above. The advantages and the scope of doctoral schools could be summarized as follows:

- Doctoral schools determine the mission or vision shared by all partners, which facilitates the transition process from doctoral students to excellent researchers;
- Doctoral schools provide a stimulating research environment and promote cooperation between various disciplines;
- Doctoral schools provide a clear administrative structure for doctoral programmes, candidates and supervisors, setting a clear profile and status of doctoral candidates;
- Doctoral schools provide a critical mass and enable the overcoming of isolation of young researchers;
- Doctoral schools bring together senior and junior researchers;
- Doctoral schools support and facilitate the work of supervisors;
- Doctoral schools organize student enrolment with transparent rules;
- Doctoral schools provide training for teaching and transferable skills;
- Doctoral schools facilitate career development, including advices on funding studies (scholarships, projects);
- Doctoral schools guarantee quality assurance and monitoring;
- Doctoral schools provide a framework for the development of policies, procedures and mechanisms in higher education institutions and act as independent arbiters (protectors of rights) when necessary;
- Doctoral schools support mobility, international and inter-institutional cooperation.

For the Serbian HE area the following advantages of DS should be underlined:

- Integrating human and infrastructural institutional resources in increasing the quality, efficiency and transparency in PhD cycle;
- Broadening the research environment for young researchers through inter-institutional and international cooperation offering the advancement of knowledge through original research;
- Harmonization of quality standards, continuous monitoring of the results and reporting to relevant institutional bodies;
- Supporting the students and staff in all aspects of program realization, specially concerning mentoring and supervision, including problem solving;
- Introduction of additional doctoral training programs in order to meet the needs of an employment market that is wider than academia, offering: wider knowledge in both specialist field of research and transferable skills and contacts with industry/business/public sector;
- Being an agent for the exchange of experiences of students in research in the related or broader scientific fields and inter/transdisciplinary areas.

Legal basis for the establishment of doctoral schools (Law on HE, by-laws) exists, since an institution (university, faculty) is entitled to define the organisational structure based on the institutional mission and strategy. Inter-institutional Doctoral Schools, including international cooperation, could be established based on joint diplomas already recognized by LHE.

There is no unique solution fitting to all the HE institutions for defining a doctoral school, but some of the common features should be followed:

Doctoral School as institutional unit (university, faculty level, interinstitutional level), incorporating the accredited PhD programs, could be established according to the LHE.

A Doctoral School could be the initiator of new PhD programs and the key organizer of Doctoral Training program which would incorporate both field specific and broader/transferable skills;

The internal structure/bodies, responsibilities and the decision flow could be tailored according to institutional policies and statutes.

Guidelines for DS establishment could be offered taking into account the basic intentions. Besides, possible changes in legal framework and accreditation standards could contribute to harmonization of Doctoral Schools:

Recognition of Doctoral School as organizational unit in new LHE could be a promoter of Doctoral Training program encompassing both research field oriented and transferable skills as an additional quality in doctoral studies;

Accreditation standards for Joint Diploma could contribute to enhancement of institutional cooperation within the PhD cycle.

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