

## ANALYSIS OF EUROPEAN EXPERIENCES IN DOCTORAL SCHOOL REPORT

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, 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*. 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 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 the possible ideas to implement new structures as Doctoral Schools in Serbia. 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 for analysing the new concept of Doctoral Schools based on European experiences and practice.

*The starting point of the analysis was based on the comprehensive overview of the experiences in III HE cycle of PhD programmes on Serbian universities since its introduction (2006). The analysis on the doctoral study level in Serbia, performed within the RODOS Project and published (Doctoral Studies in Serbia, Conference of Universities of Serbia, CONUS, November 2014), gave comprehensive overview of analytical data and quality assurance procedure and standards. Very shortly summarizing the basic finding and consecutive challenges as the leading points for comparison with European experiences in 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 1012/13), with 4,6% of PhD student in overall student cohort; 258 PhD study programs accredited on 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 cohort; enrolment reaching 60% of the overall accredited capacity, with relative domination of social&humanities and medical field in comparison to 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 PhD student questioner). The overall finding of the analysis raised at least the following opened questions and dilemmas: is the overall structure of PhD studies in accordance to national priorities/policies in economy and technology development, are considerable quantitative changes followed by adequate quality culture and quality assurance procedures and standards both on 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, specially concerning transferable skills as complementary; what is the perspective 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 contexts of new structures of doctoral schools, the advantages being presented as the segment of the performed analysis.

In the consecutive steps of the Analysis of the practice and selected examples of doctoral schools in EHEA, the approach of *harmonization versus standardization* was underlined, showing different structures and organisation of doctoral schools in HE systems in European countries (France, Belgium, Austria, Germany, Hungary, Estonia, Spain), as well as examples of international joint doctoral programmes, defining the overlapping areas of interest which could be useful in further development of the PhD cycle in Serbia on both system and institutional level targeting specially quality and efficiency of study and employability PhD graduates/young researchers. The experiences and examples of practice of EU Project partners were important part of the analysis, enabling direct exchange of experiences and detailed insight in the practical examples.

The analysis was presented and discussed on various events with different stakeholder groups, in order to both disseminate the results and to get feedback directing further steps within project activities. The analysis results were also published in two papers within Proceedings of TREND 2015 Conference, traditional national forum bringing the synergy in academic community of Serbia in defining the strategic goals of HE development and the concrete steps in further reforms in line with European trends and standards. The activities are illustrated by following events (chronologically presented):

## **1. Study visit to Technical University of Crete, September 2014**

**PhD Studies / European Experiences - Some Examples** was the topic of the special session of all Serbian Consortium members TU Crete delegation. Based on the insight to basic European principles in the field of Doctoral studies, two examples of Joint Doctorates

in Europe were presented as inter-institutional approach to high quality doctoral training. *Joint European Doctoral Programme in Materials Science and Engineering* was considered, with emphasis on intercultural skills and complementary skills being strongly supported within the Programme. *PhD Fusion Science and Engineering - Erasmus Mundus Joint Doctorate* was analysed complementary, specially concerning standardized supervision guidelines as an example of comprehensive approach in structuring the studies in the III cycle. The first insight into *Gent University Doctoral Schools* and the structure of Doctoral Training Programme (DTP) as an additional opportunity for young researchers were presented and discussed.

**2. Common meeting of National Council for Higher Education and National Council for Research and Technology Development, Belgrade, December 4, 2014. (opened to academic and research community, more than 100 participants)**

The topic related to doctoral school experiences in EHEA was a part of meeting agenda. The presentation **PhD studies / Challenges and Dilemmas**, summarized the analytical data on development of doctoral studies in Serbia, indicating the challenges and comparing Serbian experiences with European practice, underlying the advantages of doctoral school implementation as an approach to harmonisation of Serbian system with European standards and practice. The special attention has been given to quality assurance, legal and institutional environment, efficiency and international aspect of PhD studies, still being challenges for the Serbian system.

**3. The study visit to BOKU University, December, 2014**

Special session within the study visit agenda was devoted to the structure, programme and additional facilities offered by Doctoral Schools as a new approach of Boku University to doctoral training programme. Important aspects of doctoral schools in promoting doctoral degree to wider society, as well as the preparation of the students/young researchers for future professional work outside academic environment and continuous contacts with labour market during PhD studies immersed from BOKU experiences in implementing new structures, initiating very active discussion among participants. Meeting with Prof. Obinger, co-ordinator of the Doctoral School „Biomolecular Technology of Proteins” gave additional details of organisation, training and new opportunities for students within new structure in comparison to traditional doctoral programmes.

**4. TREND 2015 Conference, Zlatibor, February, 23-26, 2015**

The key points of the analysis of European experiences in doctoral schools were summarized in two papers presented at XX TREND 2015 Conference, unique and traditional forum on the issues of higher education reform and modernization in Serbia, organized by the University of Novi Sad, with the participation of all universities in Serbia, other HE institutions, governmental and non-governmental organizations in the field of higher education, and also the colleagues from the region and European countries. The papers *QUALITY ASSURANCE IN DOCTORAL STUDIES: DOCTORAL SCHOOLS* and *WHY SERBIA NEEDS DOCTORAL SCHOOLS? POTENTIAL MODELS* (authors RODOS team members) presented new trends in organisation and quality assurance of doctoral studies in the European Higher Education Area, with emphasis on new structures of doctoral schools and possible flexible models which would rely on the general European standards, strategic lines of Serbian higher education area and institutional policies. Attention has been paid to the methodologies of evaluation and monitoring of the quality of doctoral studies, to the supervision quality assurance, as well to the carrier development of doctoral students. The role of doctoral schools in the creation of an adequate research environment has been emphasized, including the achievement of a critical mass of researchers and new possibilities for learning transversal skills. Both papers are published in Conference Proceedings.

Within the Conclusion of the XX TREND Conference, being accepted by the participants from academic and wider community and published ([www.uns.ac.rs](http://www.uns.ac.rs)), it has been stated that based on the analysis of doctoral studies in Serbia, pointing out the weak points concerning organization and efficiency, restructuring of doctoral studies by introducing doctoral schools according to European experience could contribute to improvement of research excellence and research environment by establishment of critical mass of resources leading to improved quality in realisation of doctoral studies.

## **5. Study Visit to Gent University, March 2015)**

The study visit was specially focused to the experiences of Gent University Doctoral School, as an example of additional Doctoral Training Programme, encompassing both advanced specialist courses, related to the field of doctoral project, and transferable skills seminars preparing students for further professional carriers. The Programme being not obligatory for PhD degree, but offering high quality additional knowledge and skills, interdisciplinary courses and seminars gendering the students from different scientific fields with the possibilities for students to discuss the research results in interdisciplinary environment and to meet representatives of business/industrial sectors during their PhD studies is the recognizable advantage of doctoral school. The opened structure of the programme, with intensive national and international participation, is improving the research ambient and capacity. In the same time, the Doctoral School is devoted to monitoring of student progress, broadening the supervision team in order to discuss the results with

experienced researchers, guiding the students in through the research project as the focal point of PhD cycle. The visit gave the opportunity to all Serbian consortium members to have detailed insight into basic goals and content of doctoral training programme, developed organizational structure of doctoral school, as very valuable experience in introducing new structures in Serbian practice.

***Continuing with the dissemination of the analysis results, the doctoral school concept and relevant European experiences and examples were presented on two events organised by RODOS project, one oriented to academic community and the other to the stakeholders coming from business and industrial sectors.***

**6. Meeting on the University of Novi Sad (April 3 , 2015), with all Serbian consortium members representatives, being opened to academic and wider community**

In disseminating the results of the analysis of European experiences, the comprehensive overview of European experiences were presented with different examples (University of Gent, University Boku, as partners in RODOS Project, University of Brussel , University of Luxemburg, University of Helsinki, University of Szeged, overall in French and Estonian HE system), emphasising the overlapping areas of interest (new structure supporting quality and excellence in research, supporting the students during PhD cycle, carrier development support by gaining intellectual and transferable skills besides, continuous contacts with labour market, opened space for national and international mobility of students and staff).

**7. Meeting organized in the Chamber of Commerce of Serbia (Belgrade, April 23, 2015)**

The event organized in Chamber of Commerce of Serbia gathered the representatives from different stakeholders groups in discussing the possibilities of more efficient common work of academic and research society with the business and industrial sector and society as the whole in the field of very important PhD cycle devoted to development of research and innovation potential targeting knowledge based economy. The presentation of doctoral schools experiences and general intentions based on versatile examples in Europe gained special attention of the auditorium. It initiated very active discussion supporting the idea of doctoral schools as a new structure underpinning the continuous contacts between employers and academic/research sector.