

Quality Assurance in Doctoral Education – results of the ARDE project (EUA publications 2013)

From QA policies in HE and 3rd cycle HE policies to the Accountable Research environment for Doctoral Education (ARDE) project

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Foreword

EUA at 2013 publishes a report by Joanne Byrne, Thomas Jorgensen, Tia Loukkola with the title 'Quality Assurance in Doctoral Education – results of the ARDE project'. In this survey the findings of the project named Accountable Research environment for Doctoral Studies (ARDE) are being presented and analysed. ARDE project examines European doctoral programmes in order to gather information about existing structures, good practice and areas of concern in *assuring* and *enhancing* quality in European doctoral education.

The ARDE project aimed at demonstrating how quality assurance for doctoral education has been implemented in European universities. As the Bologna Process has developed, universities have put great effort into professionalising their quality assurance as well as their doctoral education, albeit often in separate processes. However, the two processes are beginning to merge. Doctoral education is being managed more professionally through doctoral schools and institutions are giving more attention to accountability and quality enhancement. The publication of the ARDE project results (which is analysed in this paper) describes the developments, outlines recommendations and underlines the differences between quality assurance for doctoral education and quality assurance for the first and second cycle.

In this paper we intend to present and analyse the findings of the EUA publication. We believe that the monitoring and analysis of policies in the area of the 3rd cycle of higher education is interesting not only for researchers and academics of social sciences but also for national and international policy makers and administrators working on higher education issues. We also believe that apart from the interest to various stakeholders these results are important for the future policies on doctoral

studies to European higher education systems and to Greek higher education system in particular. ¹

¹ This paper presents and analyses a EUA publication. Therefore references to the EUA report are not going to be present, aside from specific figures copied from the report. The references that the reader will see comes from other papers and policy documents which either been reported as references in the EUA report or from paper and policy documents we have decided that they assists on the analysis of the issue dealing the EUA publication.

1. Introduction

Quality assurance and doctoral education have been elements of the Bologna Process since the 2003 ministerial meeting in Berlin, but until rather recently, they have been developing on two different tracks. The basic principles governing both, the Standards and Guidelines for Quality Assurance in the EHEA (ESG) and the Salzburg Principles for doctoral education, date from 2005, but their development happened in very different contexts. Within institutions, the two have typically been under different governance structures, quality assurance under the vice-rector for academic affairs and doctoral education under the vice-rector for research.

Doctoral education is a core element of the traditional identity of a university. In most countries, only universities can confer the doctoral degree, and they see this as one activity that defines them as institutions. University staff are also heavily invested in the area. The close, master-apprentice relation between supervisor and supervisee is the foundation of the traditional view of the doctorate as a rite of passage, an initiation to the scientific community. Those faithful to this tradition would be very wary of institutions and lawmakers introducing reforms that potentially endanger this tradition. In this context, quality assurance can almost amount to sacrilege, disturbing a ritual, which for centuries has been a cornerstone of academic identity.

But nowadays doctoral education is not only important for the supervisor or supervisee; it is a vital activity for universities in developing research and talent. As research has become an increasingly important element in economic development, governments and society at large alike are concerned that investments in doctoral education are appropriately managed, that education is fit for purpose, theses are finished and quality is ensured.

During the last decade, universities have been a main driver in the reform of doctoral education. They have established institutional units, doctoral schools, to manage a growing number of doctoral candidates, develop programmes and not least develop doctoral education-specific processes for quality assurance –often not recognised as quality assurance and independent from the quality assurance done for the first and second cycle.

In 2010, EUA launched the Salzburg II Recommendations, a product of consultation with

European universities to collect the experiences of the reforms, including quality assurance. And the basis for quality assurance in doctoral education should be research; the quality of the research environment is the basis of the whole notion of quality in doctoral education.

As the Accountable Research Environments for Doctoral Education (ARDE) project was drafted in 2009, during the consultations for Salzburg II, it was obvious that institutional reform was proceeding rapidly in the area of doctoral education and that these developments required reflections about accountability and transparency. In fact, it was clear that these reflections were happening in Europe's universities, and that it was high time to gather experiences in a systematic way.

The ARDE project consortium reflected on the importance that doctoral education had acquired at the systemic level. Although it was important to highlight the developments within universities, it was also apparent that the issue of quality in doctoral education was on the agenda of a number of political stakeholders and of increasing interest to the quality assurance agencies. For this reason, the project was of particular interest for National Rectors' Conferences, some of which were active in the ARDE project consortium.

The report that is analysed in this paper provides a short introduction to the developments of quality assurance and doctoral education in the last 10 to 15 years and presents the evidence gathered throughout the course of the ARDE project. It gives an overall picture of the situation as seen from the point of view of universities, including discussion about which areas have been reformed, which ones present challenges, who is evaluating doctoral education and what are they looking at.

2. Quality assurance and doctoral education

2.1 Quality Assurance in the European Higher Education Area

The real rise of quality assurance has taken place in the last decade. QA is usually seen as a key accountability measure introduced as a response to the massification of higher education and the increased autonomy of universities. In the European Higher Education Area (EHEA), quality assurance has been seen as an essential action line that promotes the attractiveness and improves the quality of European higher education.

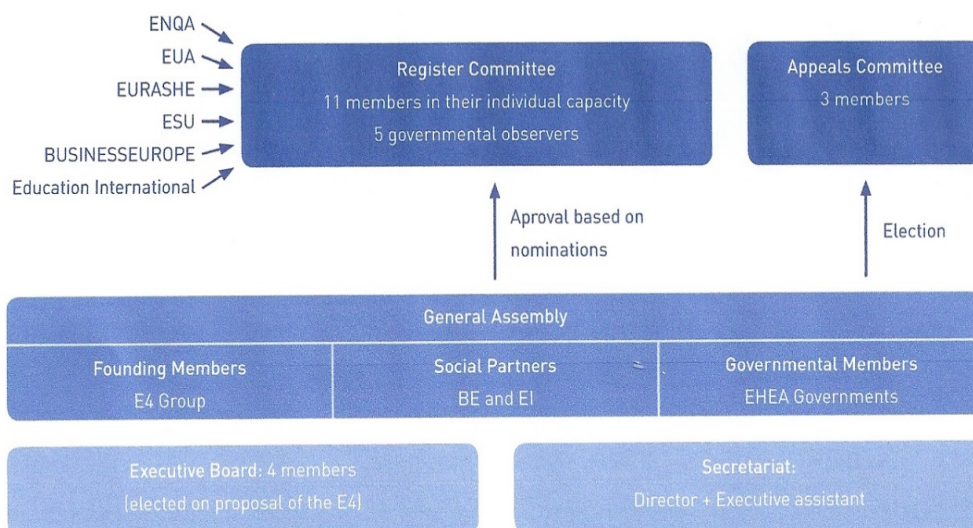
The main steps in relation to the development of a European dimension in quality assurance are:

- In 2003, the Ministerial meeting in Berlin stated that in line with the principle of institutional autonomy the main responsibility for quality assurance lies within each institution while also defining the main characteristics for national quality assurance systems. The Ministers also invited ENQA, in co-operation with EUA, ESIB and EURASHE (nowadays known as the E4 Group), to develop standards and procedures for quality assurance (Bologna Process, 2003).
- A Recommendation concerning quality assurance in European higher education took place on October 2004 (European Commission, 2004)
- Two years later, in 2005, in Bergen, the *Standards and Guidelines for Quality Assurance* in the European Higher Education Area (ESG) were adopted by the Ministers based on a proposal made by the E4 Group. The ESG have become the embodiment of European quality assurance providing the quality assurance agencies and the HEIs with guidance for their own quality assurance activities (Bologna Process, 2005 and ENQA, 2005).
 - It should be noted that the ESG are standards and guidelines for quality assurance, they present generic principles for quality assurance – whether internal or external – processes rather than rules about how quality assurance should be carried out.
 - The ESG do not present criteria for quality and it is noteworthy that they do not define what quality in higher education is. To a certain extent, one may

argue that they implicitly describe some characteristics of a good quality study programme by highlighting some procedural aspects such as transparency in terms of study curriculum and student assessment, the need to offer adequate student support services etc.

- In that respect, the ESG reflect the understanding of *quality as fitness for purpose*² and leave the purpose to be defined by each country, institution or programme.
- In 2006, the E4 Group organised the first European Quality Assurance Forum (EQAF) so as to gather all stakeholders together at European level to discuss the future of quality assurance, exchange experiences and discuss the latest policy developments. The idea of having such a Forum had been included in the E4 report on the ESG to the Ministers the year before.
- In the 2007 meeting (in London), the Ministers for higher education endorsed the creation of the European Quality Assurance Register for Higher Education (EQAR) (Bologna Process, 2007).
- The Register was another idea that had been introduced in the ESG report two years earlier and in the intervening two years; the 'E4 Group' had elaborated the concept further.

Figure 1. The Structure of EQAR Source: EQAR, 2009: 31)



² For more information about the notion of quality in higher education see Harvey & Green, 1993.

2.2 Quality Assurance and quality culture

On the one hand, quality assurance aims to demonstrate the accountability of higher education institutions to the stakeholders, and on the other hand, it usually aims to improve the quality of higher education. It is important to understand that having quality assurance processes in place is never the end goal. The challenge is to use quality assurance to improve the quality levels, considering the particular nature of universities as expert organisations. The common response given to this challenge is that universities should support quality culture rather than simply develop quality assurance processes.

Therefore shortly after the ministerial meeting in Prague, EUA launches a new program named 'Developing an Internal Quality Culture in European Universities' which, in this initial form, was completed after three phases in 2006. The whole philosophy of the program supports the belief that the approach of the quality culture should lie in all the activities of the institution, through a 'bottom-up' process in order to develop a quality culture within the institution. The main objective was to consolidate the understanding that developing quality culture within institutions, and presentation strategies to implement improvement plans at all levels and activities of the university, is necessary in order to increase autonomy and to address current and future challenges to the role and function of universities in contemporary social conditions. 134 European universities from 36 countries participated in the program.

In this program there was a definition of quality culture: *'an organisational culture that intends to enhance quality permanently and is characterized by two distinct elements: on the one hand, a cultural/psychological element of shared values, beliefs, expectations and commitment towards quality and, on the other hand, a structural/managerial element with defined processes that enhance quality and aim at coordinating individual efforts'*³.

³ For more information:

EUA (2005a). Developing an Internal Quality Culture in European Universities - Report on the Quality Culture Project 2002-2003, Brussels: EUA.

EUA (2005b). Developing an Internal Quality Culture in European Universities - Report on the Quality Culture Project, Round II - 2004, Brussels: EUA.

EUA (2006). Quality Culture in European Universities: A Bottom-Up approach - Report on the three rounds of the Quality Culture Project 2002-2006, Brussels: EUA.

2.3 Third Cycle of HE and the connection to QA policies⁴

Since the Berlin Ministerial meeting in September 2003, doctoral programmes have been included as the 'third cycle' in the Bologna process and constitute the crucial link between these two processes. In the Communiqué it was stated under the title 'Additional Actions: EHEA and ERA - two pillars of the knowledge based society': *'Conscious of the need to promote closer links between the EHEA and the ERA in a Europe of Knowledge, and of the importance of research as an integral part of higher education across Europe, Ministers consider it necessary to go beyond the present focus on two main cycles of higher education to include the doctoral level as the third cycle in the Bologna Process. They emphasise the importance of research and research training and the promotion of interdisciplinarity in maintaining and improving the quality of higher education and in enhancing the competitiveness of European higher education more generally. Ministers call for increased mobility at the doctoral and postdoctoral levels and encourage the institutions concerned to increase their cooperation in doctoral studies and the training of young researchers'* (Bologna Process, 2003: 7).

As a result EUA's Doctoral Programmes Project arose to contribute to the debate on research training in the European Higher Education and Research Areas by demonstrating examples of good practice and preparing recommendations for action based upon the pooling of experience of its members:

The final report 'Doctoral Programmes for the European Knowledge Society' published in October 2005 (EUA, 2005) provided a broad view of the landscape of doctoral programmes across Europe. The main findings addressed three issues: (a) the structure and organisation of doctoral programmes; (b) the supervision, monitoring and assessment; and (c) the mobility, European collaboration and joint doctoral degrees.⁵

In 2005, EUA published the Salzburg Principles as a response to the Bergen Communiqué of the Bologna Process, which had explicitly called for '*basic principles for doctoral programmes*'. The Salzburg Principles were instrumental in shaping the reforms of doctoral

⁴ In this section of our paper almost all of our reference to policy developments are not part of the EUAs publication; but it is essential for our analyses to highlight these developments concerning doctoral studies in higher education and their connection to QA policies.

⁵ The EUA continued to publish report on the issue of doctoral studies: EUA (2007). Doctoral Programmes in Europe's Universities: Achievements and Challenges, Brussels: EUA.

education. They underlined the importance of research, but stated that research should be embedded in institutional strategies and contain room for a diversity of practices and programmes. The ten basic principles of Saltzburg I declaration briefly are:

i. **The core component of doctoral training is the advancement of knowledge through original research.** At the same time it is recognised that doctoral training must increasingly meet the needs of an employment market that is wider than academia.

ii. **Embedding in institutional strategies and policies:** universities as institutions need to assume responsibility for ensuring that the doctoral programmes and research training they offer are designed to meet new challenges and include appropriate professional career development opportunities.

iii. **The importance of diversity:** the rich diversity of doctoral programmes in Europe - including joint doctorates - is a strength which has to be underpinned by quality and sound practice.

iv. **Doctoral candidates as early stage researchers:** should be recognized as professionals.

v. **The crucial role of supervision and assessment:** in respect of individual doctoral candidates, arrangements for supervision and assessment should be based on a transparent contractual framework of shared responsibilities between doctoral candidates, supervisors and the institution (and where appropriate including other partners).

vi. **Achieving critical mass:** Doctoral programmes should seek to achieve critical mass and should draw on different types of innovative practice being introduced in universities across Europe

vii. **Duration:** doctoral programmes should operate within an appropriate time duration (three to four years full-time as a rule).

viii. **The promotion of innovative structures:** to meet the challenge of interdisciplinary training and the development of transferable skills

ix. **Increasing mobility:** Doctoral programmes should seek to offer geographical as well as interdisciplinary and intersectoral mobility and international collaboration

x. **Ensuring appropriate funding:** the development of quality doctoral programmes and the successful completion by doctoral candidates requires appropriate and sustainable funding.

(EUA, 2005c: 2).

These basic principles are emphasized in the Bergen Communiqué which was adopted by European Education Ministers in May 2005 as key principles for further development in the

'third cycle' of the Bologna Process. In the Communiqué EUA together with other partners were charged to *'prepare a report under the responsibility of the Follow-up Group on the further development of the basic principles for doctoral programmes, to be presented to Ministers in 2007. Overregulation of doctoral programmes must be avoided'* (Bologna Process, 2005: 4). And in the same Communiqué was stated that *'We [the ministers] underline the importance of higher education in further enhancing research and the importance of research in underpinning higher education for the economic and cultural development of our societies and for social cohesion. We note that the efforts to introduce structural change and improve the quality of teaching should not detract from the effort to strengthen research and innovation. We therefore emphasise the importance of research and research training in maintaining and improving the quality of and enhancing the competitiveness and attractiveness of the EHEA. [...] The core component of doctoral training is the advancement of knowledge through original research. Considering the need for structured doctoral programmes and the need for transparent supervision and assessment, we note that the normal workload of the third cycle in most countries would correspond to 3-4 years full time. We urge universities to ensure that their doctoral programmes promote interdisciplinary training and the development of transferable skills, thus meeting the needs of the wider employment market. We need to achieve an overall increase in the numbers of doctoral candidates taking up research careers within the EHEA. We consider participants in third cycle programmes both as students and as early stage researchers. We charge the Bologna Follow-up Group with inviting the European University Association, together with other interested partners, to prepare a report under the responsibility of the Follow-up Group on the further development of the basic principles for doctoral programmes, to be presented to Ministers in 2007. Overregulation of doctoral programmes must be avoided'* (Bologna Process, 2005: 3-4).

As a result from the previous request EUA launched a series of activities in this area for 2006 which include two workshops focused on specific aspects of doctoral programmes; a working group on the funding of doctoral programmes and doctoral candidates at the conference 'A Researchers Labour Market - a Pole of Attraction' on 1-2 June 2006 in Vienna; and a final Bologna Seminar. The main objectives of these activities were to share examples of good practice from universities across Europe and to disseminate the results of the EUA Doctoral Programmes Project and the Salzburg recommendations.

At the next ministerial meeting at London on 2007 in the final Communiqué it was declared that: *'Closer alignment of the EHEA with the European Research Area (ERA) remains an important objective. [...] We invite EUA to continue to support the sharing of experience among HEIs on the range of innovative doctoral programmes that are emerging across Europe as well as on other crucial issues such as transparent access arrangements, supervision and assessment procedures, the development of transferable skills and ways of enhancing employability. We will look for appropriate opportunities to encourage greater exchange of information on funding and other issues between our Governments as well as with other research funding bodies'* (Bologna Process, 2007: 3-4).

Three years later at 2010 the Salzburg II Recommendations have been launched. Half a decade after the Salzburg Principles, the European landscape of doctoral education has changed profoundly. These recommendations are the outcome of the Salzburg II initiative, an intensive consultation with the members of the EUA Council for Doctoral Education (EUA-CDE), the largest and most comprehensive organization concerning doctoral education in Europe. The outcomes of the consultations were discussed by the more than 220 participants at the Annual Meeting of the EUA-CDE at the Free University of Berlin in June 2010, representing 165 institutions from 36 countries.

The recommendations are to be read as three different categories.

The first category cements the basis of the doctorate as based on the practice of an original research project and thereby different from the first and the second cycles. The second and largest category consists of recommendations for the concrete improvement of doctoral education, aimed at universities as well as at those providing the legal frameworks for doctoral education. The third category is aimed mostly at non-university stakeholders such as political decision makers and funding organizations, and they involve issues such as the institutional autonomy and sustainable funding of doctoral schools:

1. Research as the basis and the difference

The meaning of structure: Structuring doctoral education is to create a supportive environment. Setting up structures means taking institutional responsibility for training through research, as defined in the second Salzburg Principle. Doctoral education is an individual journey, and structures must give support to individual development, and not produce uniformity or predictability. The goals of structuring doctoral education must be to assure diverse and inclusive research environments of a high quality as the basis of doctoral

education. This includes critical mass, transparent admission procedures and high quality of supervision.

Structuring doctoral education also means achieving flexible structures to expose early stage researchers to a wide range of opportunities, ensuring personal and professional development and to provide institutional support for career development and mobility. Taught courses are to be seen as a support to the individual professional development of doctoral candidates; they are not central to the meaning of structure.

2. Clues for success

2.1. Critical mass and critical diversity: Critical mass does not necessarily mean a large number of researchers, but rather the quality of the research. In line with the sixth Salzburg Principle, Europe's universities have developed diverse strategies to assure critical mass and diversity, building their areas of strength through focused research strategies and engaging in larger research networks, collaborations or regional clusters.

2.2. Recruitment, admission and status: Structured programmes should develop recruitment strategies that correspond to their particular mission and profile. [...] Recruitment should value the research potential of the candidates over past performance and above all the candidates' potential to succeed in the programme to which they are being admitted.

Admission to a doctoral programme is an institutional responsibility, which must include the strong involvement of research staff. Admissions policies must be transparent and accountable and should reflect the research, supervisory and financial capacity of the institution. Admissions policies should also provide the appropriate flexibility in the choice of supervisor. Transparency and accountability will be strengthened by having a single, identifiable place to apply, at least at programme level. Admissions should be based on a well-defined, public set of criteria. Institutions should accept risk in admitting doctoral candidates and allow them to demonstrate their potential through a monitoring system.

Doctoral candidates should be recognised as early stage researchers with commensurate rights and duties (4th Salzburg Principle).

2.3. Supervision (5th Salzburg Principle): Supervision must be a collective effort with clearly defined and written responsibilities of the main supervisor, supervisory team, doctoral candidate, doctoral school, research group and the institution, leaving room for the individual development of the doctoral candidate. Providing professional development to supervisors is an institutional responsibility, whether organised through formal training or informal sharing of experiences among staff. Developing a common supervision culture shared by supervisors

2.4. *Outcomes*: The main outcome of doctoral education are the early stage researchers. The outcome of their research must testify to the originality of the research and be suitable for dissemination within the scientific community.

2.5. *Career development*: Career support for doctoral candidates must take into account individual goals and motivations and acknowledge the wide range of careers for doctorate holders. But it is the institution's responsibility to provide support structures for professional development. Offering training in transferable skills, including understanding the ethics of research, is central [...] Career development of doctoral candidates includes awareness about skills attained through doing research as well as of the wide range of career choices for doctorate holders

2.6. *Credits*: Applying the credit system developed for cohorts of students in the first and second cycles is not a necessary precondition for establishing successful doctoral programmes.

2.7. *Quality and accountability*: It is necessary to develop specific systems for quality assurance in doctoral education based on the diverse institutional missions and, crucially, linked to the institutional research strategy.

Assessment of the academic quality of doctoral education should be based on peer review and be sensitive to disciplinary differences.

In order to be accountable for the quality of doctoral programmes, institutions should develop indicators based on institutional priorities such as individual progression, net research time, completion rate, transferable skills, career tracking and dissemination of research results for early stage researchers.

2.8. *Internationalisation*: Internationalisation strategies should be a tool in increasing the quality in doctoral education and in developing institutional research capacity. It is understood in three different ways: Internationalisation at home (using the international profile of the home institution such as international doctoral candidates, staff, events and guest researchers); collaborative doctoral programmes; international joint doctoral programmes (joint, integrated curricula, joint committees and juries, and the joint degree), (9th Salzburg Principle concerning mobility).

3. Clearing the obstacles

3.1. *Funding*: The 10th Salzburg Principle underlines the importance of sustainable funding. Universities as well as doctoral candidates are still underfunded. High quality doctoral education requires adequate, sustainable and doctoratespecific funding opportunities.

Making a structured programme a success requires more than funding for grants or salaries for doctoral candidates and research equipment. Strategic leadership, supporting structures and career development all need resources.

Giving doctoral schools and programmes the sustainable financial means to recruit candidates would improve the competitiveness of European doctoral education.

3.2. Autonomy: The use of specific tools must be decided autonomously within the institution in accordance with the profile of the doctoral programme and the needs of the doctoral candidate.

3.3. Legal framework: Institutions must be able to develop their systems for quality assurance and enhancement independently within their national frameworks. They must have the freedom to develop their own indicators for quality that correspond with the standards of the individual disciplines as well as with the overall institutional strategy.

National legislation governing joint or dual degrees should be reviewed to facilitate international collaborations.

3.4. Intersectoral collaboration: It is essential to create awareness about the qualities of doctorate holders as well as to build trust between universities and other sectors. Such trust is, for example, built on formalised but flexible research and research training collaboration between industry and higher education institutions, including joint research projects, industrial doctorates or similar schemes.

(EUA, 2010b: 4-6).

2.4 The rise of doctoral schools as a means for developing quality culture

As they are described above there were considerable reforms in most of Europe at policies concerning quality assurance in higher education and policies about doctoral education. For the latter as early as the 1990s, some countries were embarking on changing the managerial framework for doctoral education as well as developing more structured forms of delivery. Doctoral schools were being established with the specific aim of moving away from a highly individualised model of delivery based on the personal master-apprentice relation between supervisor and supervisee. Instead, the goal was to enhance institutional responsibility in

order to integrate doctoral candidates in a research environment beyond the activities of their supervisor and to facilitate, for example cross-disciplinary research groups.

The EUA Trends reports⁶ illustrate the rapid development well: from the 2005 Trends IV report, respondents have indicated doctoral education as an important area for reform, and the percentage of institutions with at least one doctoral school (regardless of being at the programme or institutional level) roughly doubled from 2007 to 2010, going from 29% to 65%.¹⁶ In the ARDE questionnaire, this number had risen to more than 80%. Increasing institutional engagement has allowed institutions to develop career services for doctoral candidates and, not least, to establish quality assurance processes, which in many systems had been completely absent. This being said, the move towards a professional management of doctoral education has brought with it a number of processes that are de facto quality assurance processes, but without having been defined as such.

The institutional engagement in many cases: (a) develops career services for doctoral candidates and (b) establishes QA processes in doctoral studies. These led towards professional management of doctoral education (please see the next figure). It is believed that we are in a period where quality culture in doctoral education is moving from a 'professional' to an 'integrated culture'. The four types that the figure presents are briefly the following:

- Type A: engagement of management, staff and students is weak, resulting in an ineffective approach where no one really takes responsibility for quality;
- Type B: commitment to quality is implicit and embedded in professional roles, and the engagement of management is weak, as a result there is a certain degree of commitment to quality but no quality culture;
- Type C: management involvement is high and staff/student engagement is low and therefore the view of quality is managerial and often focused on procedures for quality assurance;

⁶ Reichert, S., Tauch, Ch. (2003). Trends 2003: Progress towards the European Higher Education Area (Trends III) - Bologna four years after: Steps towards sustainable reform of higher education in Europe. EUA Graz Convention, 29-31 May 2003.

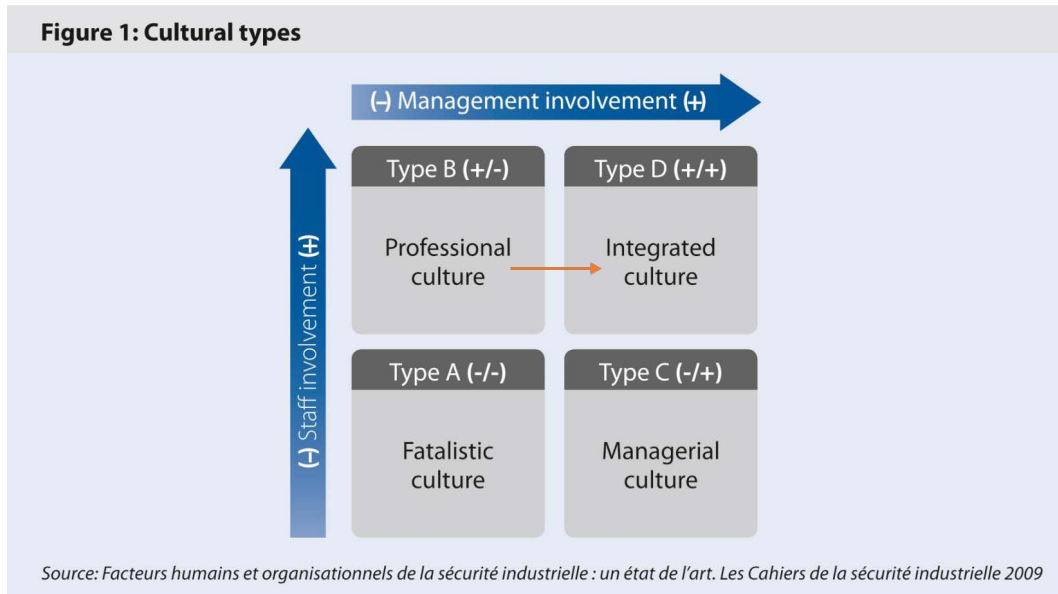
Reichert S. and Tauch Ch. (2005). Trends IV: European Universities implementing Bologna, Brussels: EUA.

Crosier D., Purser L., Smidt H. (2007). Trends V: Universities shaping the European Higher Education Area, Brussels: EUA.

Sursock, A., & Smidt, H. (2010). Trends 2010: A decade of change in European Higher Education, Brussels: EUA.

- Type D: both management and staff/student engagement is high leading to a genuine quality culture.

Figure 2. Cultural types (Source: EUA, 2013: 13)



3. ARDE survey results: ongoing reforms

3.1 Introduction

Doctoral education is a core element of the traditional identity of a university. The close, master-apprentice relation between supervisor and supervisee is the foundation of the traditional view of the doctorate. Those faithful to this tradition would be very wary of institutions and lawmakers introducing reforms that potentially endanger this tradition. In this context, quality assurance can almost amount to sacrilege, disturbing a ritual, which for centuries has been a cornerstone of academic identity. This leads to a discussion on one of the key challenges of quality assurance in higher education – how to ensure the participation, acceptance and commitment of academic staff.

Doctoral education is fundamentally different from the teaching-based first and second cycle. As research has become an increasingly important element in economic development, governments and society at large alike are concerned that investments in doctoral education are appropriately managed, that education is fit for purpose, these are finished and quality is ensured.

Doctoral candidates not least have the right to enjoy transparent structures with clear rights and responsibilities as well as the assurance that they will be part of inclusive and inspiring research environments. Doctoral education has come into focus with several new laws being prepared or implemented across the European continent.

In 2010, EUA launched the Salzburg II Recommendations, a product of consultation with European universities to collect the experiences of the reforms, including quality assurance. There it was stated that:

- It is necessary to develop specific systems for quality assurance in doctoral education based on the diverse institutional missions and, crucially, linked to the institutional research strategy. For this reason, there is a strong link between the assessment of the research of the institution and the assessment of the research environments that form the basis of doctoral education. Assessment of the academic quality of doctoral education should be based on peer review and be sensitive to disciplinary differences.

- In order to be accountable for the quality of doctoral programmes, institutions should develop indicators based on institutional priorities such as individual progression, net research time, completion rate, transferable skills, career tracking and dissemination of research results for early stage researchers, taking into consideration the professional development of the researcher as well as the progress of the research project.

Therefore, the basis for quality assurance in doctoral education should be research; the quality of the research environment is the basis of the whole notion of quality in doctoral education and this will require different approaches from the quality assurance developed for the first and second cycles. However, accountability and enhancement as factors of quality assurance and the demand for transparency are just as relevant for doctoral education as for the first two cycles.

3.2 QA in Doctoral Education – results of the ARDE project

In October 2010, the European University Association (EUA) and its partners, University College Cork (UCC), Universities Austria (UNIKO) and the Conference of Rectors of Academic Schools in Poland (CRASP), launched a new project entitled ‘Accountable Research Environments for Doctoral Education (ARDE)’.

3.2.1 Identity of the project

The project methodology combined collecting quantitative evidence through a survey distributed to European universities and, once the survey results had indicated what the major areas of interest were, a consultation process with universities consisting of four focus group meetings covering specific topics and a final workshop to consolidate the findings. The survey was distributed to the EUA membership, over 750 universities, with an accompanying glossary to offer explanations of certain terminology.

112 institutions replied, with the response rate from the UK being particularly strong with 22 institutions responding. In terms of the number of doctoral candidates covered by the survey, it is estimated that the responding universities host between them approximately 130,000, i.e. around one fifth of the overall number of doctoral candidates in the EU.

The survey indicated a number of areas, which seemed of particular relevance to universities: (1) monitoring (including the use of indicators); (2) supervision; (3) career development and (4) evaluation approaches (looking at the interplay between institutions and evaluation systems). These areas were then selected as themes for the focus groups. The four different focus groups have been presented their finding at four different workshops.⁷

As a final activity to collect evidence and to validate the preliminary results of the survey and focus groups, a one-day workshop was held as part of the EUA-CDE Doctoral Week at Karolinska Institutet in Stockholm at the end of September 2012. There participants engaged in a second round of discussion based on the focus group results.⁸

This report provides a short introduction to the developments of quality assurance and doctoral education in the last 10 to 15 years and presents the evidence gathered throughout the course of the ARDE project.

Before the presentation and the analyses of the results we have to mention at this point of our paper that the ARDE report further analyzes (at different chapters) the areas of:

- Evaluating and monitoring as a means for enhancement
- Supervision, and
- Career development

3.2.2 Admissions

In the next figure we could see the answers concerning the admission procedures.

⁷ Focus Group 1 - Indicators and data collection: Monitoring the doctoral cycle, Brussels, Belgium, (10 October 2011).

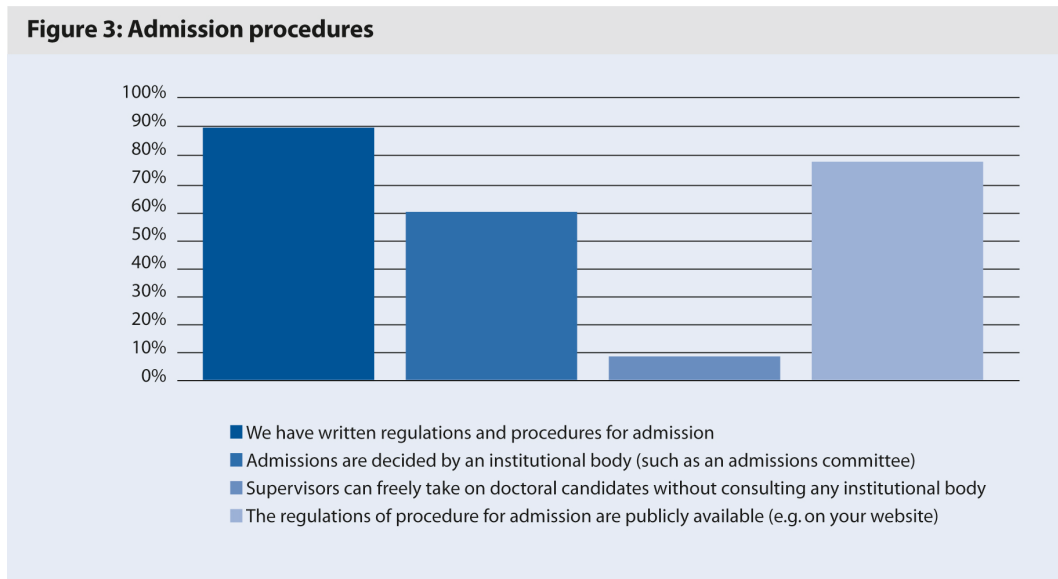
Focus Group 2 - Assuring quality in supervision, Organized by University College Cork, Dublin, Ireland, (24 November 2011).

Focus Group 3 - Career development, Vienna, Austria, (8 March 2012).

Focus Group 4 - Evaluating and assessing doctoral education, organised by CRASP Warsaw, Poland, (15 May 2012).

⁸ Final Workshop (as part of EUA's Doctoral Week), Karolinska Institutet, Stockholm, (27 September 2012).

Figure 3. Admission procedures (Source: EUA, 2013: 17)



90% of the ARDE survey respondents did claim to have written regulations and procedures for admission of doctoral candidates.

Of these, approximately 60% stated that admission procedures for doctoral candidates are decided by an institutional body such as an admissions committee and 79% stated that their regulations concerning admission procedures are publicly available.

8%, commented that professors in their institutions were permitted to freely take on doctoral candidates as supervisees.

3.2.3 Monitoring

Monitoring the progress of doctoral candidates

82% of the survey respondents claimed to register doctoral candidates on admission and 64% say that doctoral candidates are registered at regular intervals.

91% claimed to systematically monitor the progress of doctoral candidates at one or various levels. 96% of these conduct their monitoring through Progress Reports and 58% through Milestones, such as handing in papers at specific times.

Very limited number of institutions claim to use Seminar Attendance or Exams as monitoring tools.

Monitoring the supervision of doctoral candidates

61% of institutions claimed that supervision of doctoral candidates is systematically monitored although there were large differences between some countries. 20 out of 22 British institutions claimed to monitor supervision while six out of seven German respondents stated that they did not monitor supervision.

3.2.4 The outcomes of doctoral studies and the methods in place for evaluating the outputs

The vast majority of ARDE survey respondents (96%) found that the procedure in place for awarding the doctorate in their institution was adequate.

Committee composition

For the vast majority of institutions, the committee was composed of a mixture of internal and external members with only five institutions stating that the committee was composed of members from the candidate's institution alone.

Selecting the Committee

In only five cases was the committee chosen by the supervisor, whilst in over 60% of cases a departmental board or academic council established the committee and in almost a quarter this was the responsibility of the doctoral school.

3.2.5 Tracking and career development opportunities

Only 23% of respondents (26 institutions) answered that they track the careers of PhD graduates. Of these, 21 universities track within three years, 10 within four to seven years and 2 institutions are tracking after more than seven years of graduating.

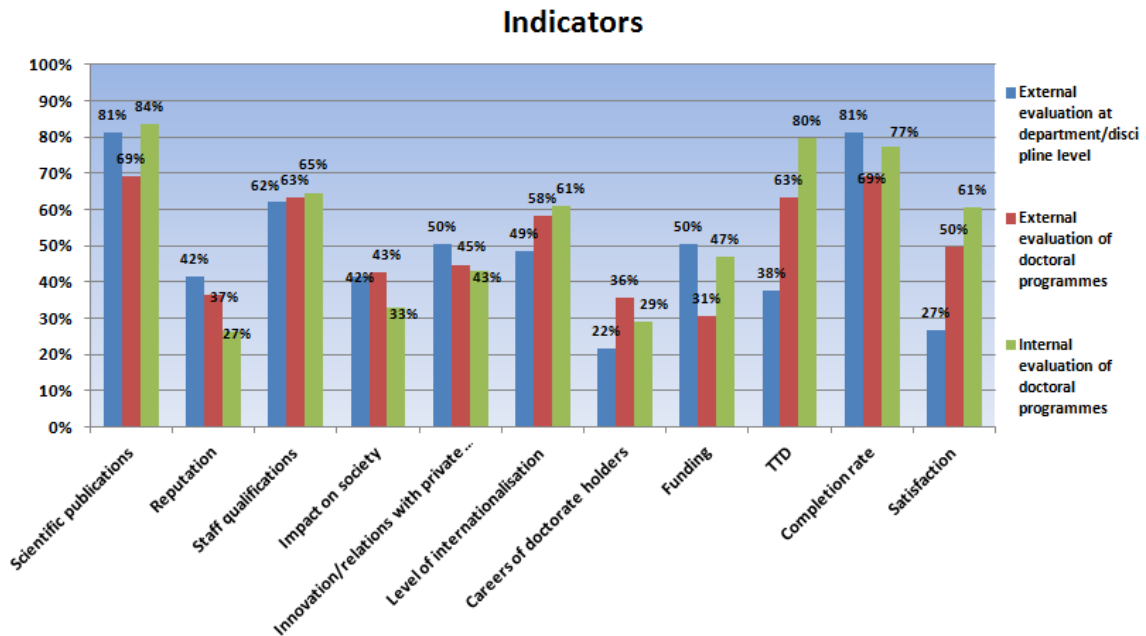
On the other hand, an impressive 79% of the responding institutions offer career development support for doctoral candidates, such as transferable skills training.

3.2.6 The use of indicators

101 institutions answered the question regarding what indicators are used in external evaluations at programme level and department/discipline level.

The graph below compares these answers to those given by the 78 institutions which claim that indicators are used for the internal evaluation of doctoral education.

Figure 4. Indicators (Source: EUA, 2013: 19)



There is a diversity of the indicators used to monitor doctoral education.⁹

In the external evaluations of the departments/disciplines the most commonly examined indicators were scientific publications and completion rates (both with 81%), whereas staff qualifications was of interest in only 62% of the cases and other indicators were of interest only in half or less of the cases.

In the internal evaluation and monitoring of doctoral programmes, universities seem to pay attention to pretty much the same indicators as the external research evaluations, apart from the fact that universities seem to look more into the level of internationalisation and candidate satisfaction (61%).

In the chapter 4 of the ARDE report, named 'Evaluating and monitoring as a means for enhancement' a further analysis over the use of indicators takes place.

It is stated that the relationship between doctoral programmes and external evaluation of doctoral education is very important for the enhancement of quality in doctoral studies. Simultaneously, the regulatory context of doctoral education is highly diverse in Europe, and

⁹ TTD means: Time to Degree

doctoral education is often evaluated and assessed simultaneously by many different bodies.

54% of institutions responded that the dominant process in use was based on: institutional accreditation, evaluation or audit.

66% of institutions claimed to have national research assessments at the programme/department or discipline level which explicitly refer to doctoral programmes. 74% of these said that there were assessments related to external funding which explicitly refer to doctoral programmes at the programme/department level, while 45% said there were such assessments at institutional level.

Recent Bologna Process reports (Eurydice, 2012) show that all countries that have established a national qualifications framework (NQF) have included doctoral studies in the framework. Yet, there exist challenges in defining these outcomes and the topic remains controversial to many. However, considering that the NQFs are based on the presumption that the programmes are learning-outcome based, it is not that surprising to note the slight trend for external evaluations of doctoral education to refer more frequently to learning outcomes also in their processes.

In the EUA (2009) projects on quality assurance, internal quality assurance has been understood not only *'as a specific quality monitoring or evaluation processes often carried out by a specific quality unit, but including all activities related to defining, assuring and enhancing the quality of a HEI'*. This interpretation emphasizes the fact that evaluating and monitoring alone is not sufficient for quality enhancement.

Also the Trends 2010 report and also the results of the ARDE survey demonstrate that institutions have introduced new processes that aim to ensure increased transparency in a systematic way.

With regard to monitoring in particular, it is important to think of the purpose for which the information is used: information should facilitate the quality enhancement of doctoral education and it should be clear and transparent who is responsible for taking action in relation to solving problems and improving procedures. And monitoring progress can be divided into the monitoring of the scientific progress of the individual doctoral candidates and the overall trends within the institution as a whole and their relation to strategic aims.

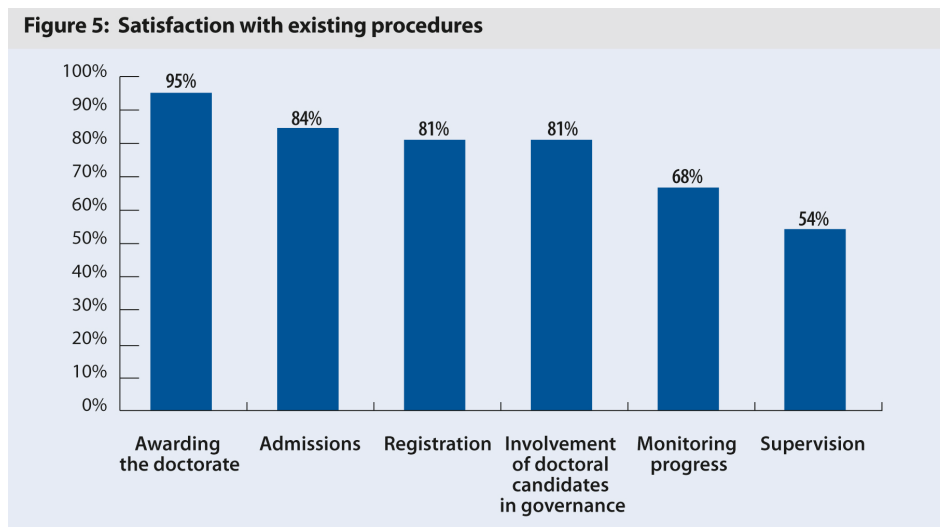
In this chapter of the ARDE report about evaluating and monitoring also some concerns about over-reliance on key performance indicators were expressed:

- While indicators can be useful for monitoring the performance of a programme, they need to be complemented by other sources of information.
- Indicators should always be considered in the context of the programme and institution as a whole. The interpretation of completion rates and time-to-degree should be, for example highly dependent on regulations concerning admission to doctoral education. Moreover, terminology concerning key performance indicators is not uniform. This, as well as the lack of context-sensitive indicators, are hindering comparison between systems and institutions.
- There may be a need to develop indicators to meet different needs. External evaluation bodies may have different needs to strategic management at the institutional level or management at the programme level.

3.2.6 Institutions engaged in reform

In the next figure the satisfaction with existing procedures is being depicted.

Figure 5. Satisfaction with existing procedures (Source: EUA, 2013: 20)



One issue to emerge from the analysis of the survey results was that, despite overall rather high satisfaction rates in six different areas, a high proportion of universities were, nevertheless, planning to engage in reforms related to doctoral education management.

The area in which most concrete reforms are being planned is in supervision, with 50% of the institutions with power to change supervision practices citing an intention to do so.

3.2.7 Supervision¹⁰

Let us focus on the Supervision the area where most respondents seemed least satisfied and the area where more than the half institutions intend to make reforms.

Some possible problems in the apprenticeship model:

- There is no formal procedures to concretely ensure fundamental elements of supervision exists such as timely and thorough feedback on doctoral candidates' work or regular meetings.
- Supervisors could theoretically take on doctoral candidates and not spend any time or effort on training them.
- In systems where doctoral candidates are not enrolled in the institution, but have a purely personal relationship with their supervisor as the only reference point, there is little that institutions can do to ensure that the quality of supervision is satisfactory.

Apart from the moral obligation to provide good supervision, universities are under considerable external pressure to ensure that lack of good supervision does not hamper the progress of doctoral candidates.

Implementation of reforms and engaging staff

Supervision involves the core of a set of important academic values linked to the master apprentice relationship, and it is an area which traditionally has been seen as privileged, private territory.

Let us remember that we are in a period of transition between what has been called a 'professional' quality culture of high staff but low management involvement to an 'integrated model' where both staff and university management are highly involved in doctoral education. This transition has an obvious potential to create conflicts.

Moreover the ARDE project only comes across a few examples of supervision being an important element in the overall career of researchers: University researchers are first and

¹⁰ Supervision is been analyzed in a separate chapter on the ARDE report (chapter 5).

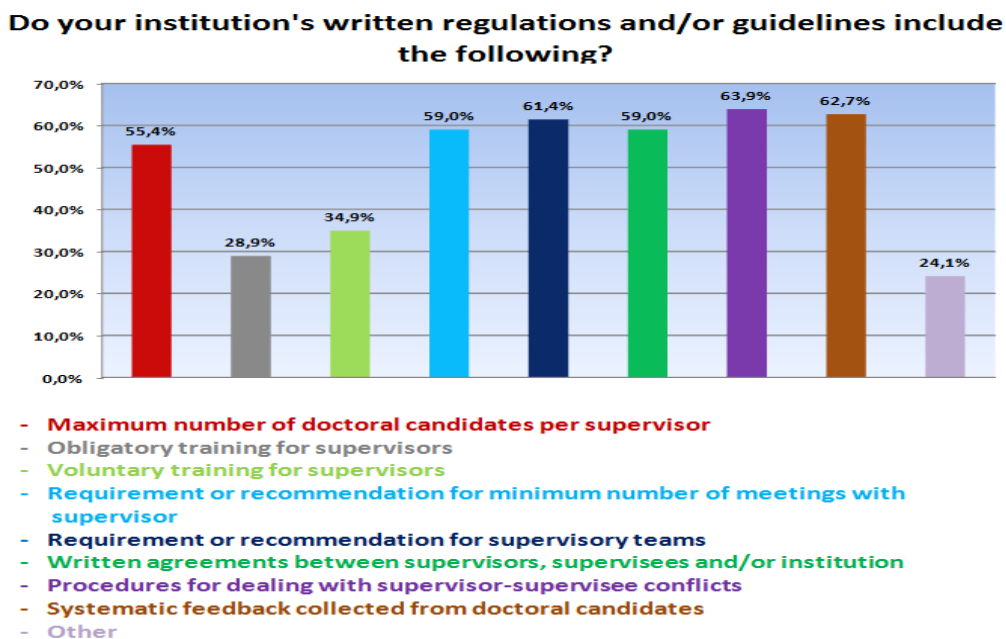
foremost judged on their performance in terms of publications. Making supervision an official part of the promotion process for research staff would certainly further good supervision, engaging actively in developing their skills as supervisors and generally ensuring that doctoral candidates were receiving the best possible support for their research project. It would also reward the efforts of the many supervisors who are dedicated to supporting doctoral candidates and today receive little merit for this.

Regulations and Guidelines

75% of respondents had written regulations and/or guidelines for supervision. Since supervision is such an important issue for the quality of doctoral education, this could be regarded as a fairly low number.

According to the ARDE survey results, the content of supervision rules or guidelines varies considerably. A majority of respondents had documents that covered key issues such as maximum number of supervisees per supervisor, requirements for a minimum number of meetings or for written agreements. However, none of the main examples for procedures were done by more than two thirds of the respondents (see Figure 6).

Figure 6. Written regulation and/or guidelines for doctoral studies (Source: ARDE Focus Group 2, 2011: 9)¹¹



¹¹ The figure has been quoted by the final presentation that the ARDE Focus Group 2 'Assuring Quality in Supervision' has made on 24 November 2011 at Dublin.

For the content of the regulations or guidelines, it seems common to have a set of explicit responsibilities of the supervisor, the doctoral candidate and the institution. These responsibilities usually cover good conduct of research, knowledge of university regulations, and a prescribed minimum amount of communication between supervisors and supervisee and –at times– responsibilities concerning the financing of the doctoral candidates. The responsibilities of the supervisor would be more linked to formal compliance and ensuring that the doctoral candidate has the necessary basis to carry out research in accordance with the norms of the institution and the discipline. It is then the responsibility of the doctoral candidate to carry out the research and provide the necessary information to the supervisor to enable him or her to give advice on the basis of this information. Such overlapping or shared responsibilities are not necessarily a weak point in the internal guidelines; rather they demonstrate the dynamic and close relationship which characterizes doctoral supervision.

Professional development of supervisors

Many institutions have introduced measures to improve the quality of supervision by offering (or demanding) training of supervisors. Again, there is much diversity among practices: obligatory courses for supervisors are part of regulations in a little less than a third of the ARDE survey responses, but they exist only for about a fifth of the whole sample, including those that do not have regulations. In institutions where the attitude is not positive towards university management establishing formal training programmes, informal peer-learning groups can be established as a forum for active supervisors to exchange experiences without any training in the strict sense being involved.

As with rules and guidelines, formal and informal training serves purposes both of compliance and quality enhancement: Introductory courses to supervision would often establish a common ground of knowledge about the formal rules, rights and duties related to supervision.

Obligatory training ensures that every supervisor is informed and has been part of an institutional discussion about supervision. There is a risk that voluntary measures will only reach those who are already positive about professional development instead of more problematic cases.

Informal training through, for example peer-learning exercises, will ideally allow for continuous development of a common supervision culture based on good practices. However, such training would not necessarily ensure, for instance that supervisors were all familiar with regulations and policies at the institution.

3.2.8 Career Development¹²

The Salzburg Principles from 2005 specifically mention that institutions have the responsibility to provide – among other things – ‘career development opportunities’ (EUA, 2005c: 2). The change in focus in doctoral education from the research output, the thesis, to the doctorate holder has been vital to the development of career services. The 2010 Salzburg Recommendations underlines this by clearly stating that the ‘*The main outcome of doctoral education [is] the early-stage researchers*’ (EUA, 2010, Salzburg II Recommendations).

Transferable skills and professional development of the candidate

Definition of Transferable Skills: ‘*Transferable skills are skills learned in one context (for example research) that are useful in another (for example future employment whether that is in research, business etc). They enable subject- and research-related skills to be applied and developed effectively. Transferable skills may be acquired through training or through work experience*’ (ESF, 2009: 47). Generally, transferable skills training is offered either as a part of a specific curriculum in a doctoral programme, or through a central unit at the university.¹³

The overall situation with regard to career services is thus somewhat irregular. Most universities have taken initiatives to offer career development to their doctoral candidates, but the content and management of these services varies widely and they are not always available to all doctoral candidates.

Collecting feedback on career development

¹² Career development is been analyzed in a separate chapter on the ARDE report (chapter 6).

¹³ *An example of practice:* The UK and Ireland have skills statements that define what skills doctorate holders can be expected to possess. These statements aim at both the development of doctoral programmes as well as doctoral candidates. Institutions can use them as a basis for structuring their career development services, and doctoral candidates gain awareness of the skills they attain through their research projects and what additional skills they might want to attain through other mean.

While a sizeable majority of respondents to the ARDE survey did offer career development services to their doctoral candidates, only about half of these systematically monitor the quality of this support. A small number of respondents to the ARDE survey used employer feedback.¹⁴

Tracking

In 2012, EUA published the report *Tracking Learners' and Graduates' Progression Paths* about practices on tracking in the university sector, while the European Science Foundation shortly afterwards published a report mostly from the point of view of funding organisations. Both reports also looked at national tracking exercises. At the European level Eurostat and the OECD have devoted considerable effort to tracking doctoral holders' careers.¹⁵

According to the ARDE survey, 29% of respondents used "Careers of doctorate holders" as an indicator in internal evaluations, and 36% of the respondents indicated that the same indicator was used in the external evaluations of doctoral programmes. When concretely asked about systematic tracking, only 23% of the survey respondents claimed to do this and only 12 universities tracked graduates for more than four years after graduation.

Though many participants in the ARDE project identified various challenges related to using tracking results as a key performance indicator, they were positive towards tracking as a feedback mechanism. This echoes the findings of the TRACKIT project, which found tracking to be used more as evidence for strategic decisions than as an indicator of efficiency (Gaebel, M., et al., 2012: 51-52).

¹⁴ *An example of practice:* The DOC-CAREERS projects carried out by EUA, often involve a long-term relationship between universities and companies, and give priority to the common development of human resources.

¹⁵ Gaebel, M., et al. (2012). *Tracking Learners' and Graduates' Progression Paths: TRACKIT*. European Science Foundation (ESF) (2012). *How to Track Researchers' Careers* www.oecd.org/sti/cdh.

4. Conclusions

Quality assurance and doctoral education have been developing on two parallel tracks, which until recently have rarely converged. The ARDE project demonstrated that internal quality assurance processes at doctoral level have been set up, or that they are being developed, across Europe.

Institutions have established processes for monitoring such things as:

- time-to-degree and completion rates;
- the quality of the research environment;
- the rules or guidelines for admission, supervision and the final thesis

Moreover Institutions have established processes that make admission to doctoral education more transparent through public rules and requirements and institutional admission committees. In the key area of supervision, there is a notable trend towards establishing rules or guidelines as well as using individual contract-type agreements between supervisor and supervisee. In comparison to the traditional, personal master-apprentice relationship, this is an important step forward in terms of transparency. Therefore institutions are generally engaged in developing a quality culture that engages all stakeholders.

Quality enhancement processes are also prominent in doctoral education:

- Supervision is one of the areas where the ARDE project has shown how priority is given to quality enhancement and the creation of a quality culture. Institutions in many countries across Europe are establishing training for supervisors as well as creating institutional spaces for exchanging experiences and good practices between supervisors.
- Career development is another area where much work has been done to create feedback loops that enable institutions to enhance the quality of, for example transferable skills training.

Quality assurance in doctoral education should use processes that take point of departure in the specific needs of Doctoral education. These processes must ensure that the necessary research capacity is at hand, that the research environment is inclusive and inspiring and that supervision is adequate.

A research environment must have a high degree of academic quality or critical mass of research. This means that doctoral candidates are integrated in an environment where original knowledge is produced to the point where they are working as an independent part of this environment, producing original knowledge themselves.

Quality in supervision is the key factor for making the doctoral candidate develop and grow as a researcher. Again, supervision is different from teaching: As the doctoral candidate produces original knowledge, the supervisor, ideally, will have little more to give in terms of concrete knowledge of the specific area, and the doctoral candidate will become more of a colleague than an apprentice. This particular relationship is often highly personal and very delicate, and processes to ensure quality in supervision should reflect this. Enhancing quality in supervision through sharing of experiences and practices goes beyond developing didactics and relates to the much more intimate relationship between supervisor and supervisee, which can be inspirational as well as conflict-ridden.

4.1 A final remark of our analysis

Much could be achieved by establishing a higher degree of coherence between the many different evaluations that doctoral programmes are submitted to.

The ARDE project, in our opinion, has shown two different and equally important things:

1. A basic trend in the 3rd cycle of higher education is a shift from a High staff involvement and Low management involvement towards a High staff involvement and High management involvement (+). In other words from a 'professional culture' towards an 'integrated culture' (see Figure.2 Cultural types).
2. The ARDE reports has shown that at the present there is no lack of evaluation of doctoral education, rather a risk of uncoordinated over-evaluation of that level of Higher education in Europe.

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