A3ES

Agência de Avaliação
e Acreditação
do Ensino Superior

STATEMENT ON DOCTORAL EDUCATION

SCIENTIFIC COUNCIL OF A3ES

22 FEBRUARY 2024

Context

Political-economical aspects

There is an Increasing number of requests for accreditation of DP which raises the issue of the capacity of HEIs to take care properly of them but also of the concern about their employability.

Another dimension is the requirement for institutions to have a certain number of doctoral programs autonomously or structured in a so-called Doctoral School in order to qualify forHEI accreditation / "label"

Legal aspects

Requirement that doctoral programs be integrated into or linked to research units assessedas very good or excellent by the Foundation for Research and Technology.

The new right granted to polytechnics to train doctors and therefore to organize DP, but which do not necessarily have the research infrastructure and staff.

Quality assurance aspects

There is currently no specific scheme to evaluate DP and the guidelines used are those of the BSc's and Masters. This is not fully satisfying considering the specificities of the education at that level.

Analysis

In the view of the SC, the evaluation of doctoral education should be strongly linked to a clear and explicit vision of doctoral education (goal, process and the learning outcomes). This is why the SC wants first to make explicit the vision they share about doctoral education in order to clarify how the link between this understanding and the analysis is as well to make as suggestions and recommendations.

Globally the SC agrees with the view shared by the board in the memorandum prepared by the president and they are also fully in line with Salzburg principles I & II

The main aspects of this vision are:

Goal:

The SC is in line with the internationally shared view on this, namely:

"*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*". (Salzburg principles)

Even though research is a component of any higher education curriculum, it has a morecentral role at doctoral training level.

"The core of doctoral education is deep engagement with a question, problem or hypothesis at the frontier of knowledge, and advancement of this frontier under the guidance of expert and committed supervision. To be awarded a doctoral degree, the candidate must have made an original contribution to knowledge". (Irish national framework for doctoral education 2023- principle 1).

Students

A priori, DP are aimed at curious, creative and motivated people with very good cognitive and technical skills. Therefore, they have to be properly selected and Doctoral Programs should develop recruitment and admission strategies in line with the specific outcomes of the program and the candidate's potential to succeed in the program. There must be a cleardefinition of expectations for candidates (rights and duties), in line with the expectations of institutional structures (also with those of supervisors and external partners)

One dimension which is increasingly taken into account is the well-being of junior researchers (anxiety, stress, depression etc.).

Learning outcomes

In line with most frameworks the following reflections are made.

The goal is to transform students capable of understanding and reproducing knowledge to a researcher capable of producing knowledge independently. "*A doctorate holder has demonstrated that he or she is independently capable of working at the frontier of knowledge and managing the challenge of being in an unexplored area". (EUA- ARDEproject)*

In a broader definition it is possible to refer to European Qualification framework

EHEA-Level 8 (Third cycle), on which the Scientific Council agrees and which states:

- *have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field;*

- *have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity;*
- *have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication;*
- *are capable of critical analysis, evaluation and synthesis of new and complex ideas;*

- *can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise;*

- *can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society.*

Following competence can also be added:

- Are able to meet (or to discover) the need of an employment market (academia or widerthan academia) and to design special knowledges as values for society.

Content of the program in order to achieve this goal

The core of doctoral training is therefore research activity. This activity is supported by a supervisor, a supervising team and a research team. This main activity is completed with different and diverse trainings and resources. The quality of environment of research iscrucial for quality of research activity and its outcomes.

Research activity:

"The implication of this focus on research and quality assurance in doctoral education, is the crucial role of ensuring a critical mass of research so that doctoral candidates can be part of a research culture, and a diversity of research so that there is access to different ways of thinking and different methodological approaches. The research mindset develops through exploring challenges and engaging in discussions, which require a vibrant research environment. Salzburg II also states that this is not necessarily synonymous with a large number of researchers, but the issue of critical mass makes institutions look closely at ways to ensure good research environments eventually through collaborations and joint programs". (EUA ARDE Project)

So to ensure good conditions for success, institutions, in a transparent process with accessible information, should "protect" enough time for research, integrate junior researchers in teams, provide opportunities for interactions, easy access to infrastructures.

Supervision:

"*Working on the frontier of knowledge also means that doctoral education is highly individual by definition. An original research project rarely follows an easily predictablepath: hypotheses prove wrong, experiments fail, or archives turn out to be empty (or tocontain different, but more interesting material). It is through these challenges that thedoctoral candidate develops the creative and flexible research mindset". (EUA ARDE Project)*- However "highly individual" doesn't mean lonely…

Becoming an autonomous researcher is mainly done through experiential learning. This learning is based on a process. There are different models of experiential learning, but they converge on basic steps (e.g. Kolb (1984) identifies 4 phases: Experience, Reflexive Observation, Conceptualisation and Active Experimentation). This process is not automatic, and supervision is needed to support the process. This implies feedback, widening understanding, giving food for thought. The supervisors play a critical role in developing research mindset in junior researchers, supporting the development of critical thinking and other academic values, helping them to become autonomous researchers.They are the ones who introduce them to the research environment at all levels (unit, institution, internationally). Moreover, supervisors are role models and should be able to deal with the emotional aspects of doctoral training (stress, reduced motivation etc.). Therefore, being supervisor means taking a guiding role including support as much as setting and checking expectations. In short, supervisors have to be properly trained and need to share experiences with others. Nowadays it is not possible anymore just to reproduce what we have experienced as PhD candidates sometimes some decades ago... In that sense supervision is done in teams to increase diversity of perspectives and reduce risk of mobbing. This also means that doctoral education is an institutional responsibility and not only a personal one.

In other words, doctoral candidates should have access to supervision teams.

To ensure clear expectations, supervisory roles should be clear and made explicit in "guidelines". This also applies to co-supervisors, coming sometimes from outside academia. Their role has also to be clear and linked to the specific added value

expected (e.g. professional integration, support for research in an applied field, etc.) In that case mentor/supervising competencies are more important than academic titles.

Training

Training opportunities are important to develop competences and can be of different nature and intensity.

- Research skills, including methodology, ethics and academic integrity as well as advanced digital competencies.

  The EUA- CDE surveys « Doctoral Education in Europe (2019 & 2022) show that these teaching topics are widely shared and mandatory in more than 60% of the 134 institutions answering.

- "Academic"
  This can be:
  - Expert courses in the field of the doctorate
  - Topics to broaden junior researchers' perspective (epistemology, etc)
  - Courses in other fields (multidisciplinary)

The Scientific Council likes to underline that Doctoral Programs should not contain too much academic teaching to remain focused on research development. Moreover, multidisciplinary courses should be linked to the learning outcomes and in a limitedamount.

- Soft skills, such as communication, teamwork, or entrepreneurship.
- Training should also include opportunities to be confronted with international colleagues (seminars, conferences, invited speakers etc.)

To take into account the individuality of the process, the Scientific Council considers that compulsory training should be kept to a minimum to allow for diversity and leave enough space for work and reflection linked to research.

Obviously, all these dimensions should be the basis for evaluation criteria, knowing that scrutiny of the process must be transparent.

<u>Quality management</u>
As usual Quality Assessment processes should basically evaluate whether the conditionsthat are seen as needed for a quality training are fulfilled and whether the

results are thosethat were expected. In this context, the process should assess stakeholders, including alumni, satisfaction with the programme (conditions, results, etc.). In addition to this control side of Quality Assessment processes, a component of support to development should also be included. (see further for details)

The process should be as close as possible to other quality processes to ensure coherence of the system, though considering the specificities of Doctoral Programs

For instance, the following items of the guidelines for evaluation of programs could be included in the scheme for Doctoral Programs:

1. General characteristics of the program
   - Orientation ("Pure", applied, relations with economy, etc) and goals of theDoctoral Programs
   - Minimum time "protected" for candidate's research
   - Training organisation
   - Partnerships & Collaboration

2. Synthesis improvement measures

3. Results
   - Graduate efficiency
   - Employability
   - International

4. - Institutional and program organisation of Quality Assessment mechanisms
   - SWOT analysis & improvement planned

Suggestions / Recommendations

Young doctors are certainly one of the jewels in the crown of HEIs. The institution that awarded the doctorate very often has an influence on the graduate's career. This is an important aspect of the university's image, so it is essential that HEIs take particular carein training new PhDs. It is with this in mind and with the intention, in the long term, of supporting HEIs in this noble and demanding mission that the following suggestions and recommendations are made.

When thinking about the question of evaluation of Doctoral Programs, the SC kept in mind two main priorities of the board, namely, to allow for diversity and the willingness to buildtrust with institutions.

Diversity

To support diversity, the SC favors general criteria that can be applied to all situations and are not too detailed.

In this perspective they agree on the principle that criteria for universities and polytechnics are the same because it is the level which is the target. What may be different is the field and kind of research, but they have an important component in common, namely the research which is the heart of doctoral education. In the view of the SC, the level is much more about thinking capacity than knowledge. Since job opportunities in academia are limited, it could even happen that the share of soft, transversal competences are comparable. In the same line the SC does not support the development of professional doctorates as they exist in the Anglo-Saxon world.

In line with diversity Salzburg recommendations are very clear

"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. 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 programs, 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.

2.8. Internationalisation

Internationalisation strategies should be a tool in increasing the quality in doctoral education and in developing institutional research capacity. Internationalisation in doctoral education is understood and interpreted in different ways, ranking from internationalisation at home (using the international profile of the home institution such as international doctoral candidates, staff, events and guest researchers), collaborative doctoral programmes (with individual mobility – such as co-tutelle) to international joint doctoral programmes (joint, integrated curricula, joint committees and juries, and the joint degree).As stressed in the ninth Salzburg Principle, doctoral education should include the possibility for mobility experiences. The choice among

these different models of internationalisation must be coherent with the research strategy of the institution and the individual needs of the doctoral candidate. The mobility of doctoral candidates must be driven by the research project".

Trust

Evaluation has to ensure that required conditions are not only met but also support development. The evaluation scheme tries to balance accountability and support for development in that regard, there could be a part with more normative expectations (e.g. existing guidelines for supervision) and a part more qualitative and supporting thinking about Doctoral Programs (e.g. what is done to ensure well-being, or professional integration).

Of course, these criteria and guidelines should be discussed with HEIs and try to understand what they need so that it can also be a support for the development of DoctoralEducation.

Suggestions for criteria

1. **Quality management**

As usual QA processes should basically evaluate whether the conditions that are seen as needed for a quality training are fulfilled and whether the results are those that were expected. In this context, the process should assess stakeholders, including alumni, satisfaction with the programme (conditions, results, etc.). In addition to this control side of QA processes, a component of support to development should also be included (see further for details). Also included is the evaluation of the way the strategic vision of the HEI (and Doctoral Schools, if any) is articulated with the outcomes of the DP, and how effectiveinstitutional governance and its administrative procedures were on the quality of DP.

The process should be as close as possible to other quality processes to ensure coherence of the system, though considering the specificities of DE.

For instance, the following items of the guidelines for evaluation of programs could be included in the scheme for DP

General characteristics of the program
- Orientation ("Pure", applied, relations with economy etc) and goals of the DP
- Minimum time "protected" for candidate's research
- Training organisation
- Partnerships & collaboration.

1. Synthesis improvement measures
2. Results
   - Graduate efficiency
   - Employability
   - International
3. Institutional and program organisation of QA mechanisms
   - SWOT analysis & improvement planned.

This criterion of quality management applies to IQA at institutional and DP level.

A short cut could be to use the "Very good" assessment in Research and IQA in the institutional evaluation as a first filter.

2. Research activity:
- Time "protected for research in contract and reality (survey)
- Integration in a team
- Access to infrastructure
- Size research unit / collaborations

3. Supervision
- clear rules and guidelines
- involvement of a team of supervisors
- opportunities of professional development for supervisors

4. Training
- Includes training and opportunities to develop research competences
- Includes opportunities to confront with other scientists locally and internationally
- Offers optional trainings to broaden perspectives and to develop soft skills
- Includes opportunities to develop
- Share compulsory / optional trainings; volume academic teaching
- Share research oriented / other trainings
- Relevance of multidisciplinary teaching as compared to the goals of the DoctoralPrograms

5. Students
- Admission and follow up process / administrative support
- Policy and activities to take care of well being

6. Results
- Evaluation of learning outcomes
- Time to completion/completion rate
- employability

Potentially useful resources

IRISH national framework for doctoral education 2023

https://www.myphd.ie/sites/default/files/2023-07/National%20Framework%20for%20Doctoral%20Education%202023.pdf

Report EUA solution - IRISH framework

https://www.iua.ie/wp-content/uploads/2021/07/EUA-Solutions-report_HEA_QQI_IUA_THEA.pdf

EUA_CDE 2 reports (2019/2022)

https://eua.eu/resources/publications/1017:doctoral-education-in-europe-current-developments-and-trends.html

Ghent University doctoral education framework

https://www.ugent.be/doctoralschool/en/regulations/phdqualityframework.htm

Euridyce

https://eurydice.eacea.ec.europa.eu/national-education-systems/poland/quality-assurance-higher-education

Salzburg principles

https://eua.eu/resources/publications/615:salzburg-ii-%E2%80%93-recommendations.html

Leru: maintening QC in doctoral education

https://www.leru.org/files/Maintaining-a-Quality-Culture-in-Doctoral-Education-Full-paper.pdf