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# Introduction

The ad hoc group on the third cycle has been set up by the BFUG in 2012 to contribute to the realization of the plan of work for the period 2012 – 2015. The group is included as sub structure of the Structural Reforms Working Group. It is co–chaired by representatives of Italy, Romania and Spain. The group has met five times (in Rome in December 2012, in Bucharest in May 2013, in Madrid in October 2013, in Bucharest in February 2014 and in Rome in May 2014). The membership of the group includes Armenia, Austria, Belgium/Flemish Community, Belgium/French Community, Croatia, the Czech Republic, Denmark, France, Germany, the Holy See, Hungary, Ireland, Moldova, Poland, Ukraine, United Kingdom, the European Commission, the EUA, EI, and EURODOC.

Within a broader framework of overseeing and improving the implementation of structural reforms in the EHEA under the responsibility of the Structural Reform WG (SRWG), the BFUG decided to develop the policy recommendation set by Ministers by setting up an ad – hoc working group on the Third cycle as a sub-structure of the SRWG. The recommendations proposed apply to all EHEA participating countries, to their Ministers and to all participating Higher Educations Institutions.

The present report summarizes the work of the group during his mandate. The report has been edited by the co-chairs team, composed by Italy (Marzia Foroni and Nicola Vittorio), Romania (Cezar Haj and Horia Iovu) and Spain (Gloria Molero). The contents and recommendations have been discussed and shared with all members of the group. The mandate of the group as well as a list of all the documents developed during its mandate can be found in annex.

According to the mandate given by ministers at the Bucharest Ministerial Conference (2012), the working group looked at ‘how to promote quality, transparency, employability and mobility in the third cycle’, with a view to ensuring that the third cycle contributes to bridging the EHEA and ERA. The quality of the second cycle was also seen as a pre-requisite in fostering the knowledge triangle: teaching, learning and research and thus attention was paid to the transition between the second and the third cycle in the present report.

The report is divided in three main sessions. The first session “Mapping the implementation of the Salzburg Recommendations and of the Principles for Innovative Doctoral Training” summarizes the main developments in Doctoral training of the last ten years around the issues of institutional strategies, structured training, advancement of knowledge and exposure to industry, employability and entrepreneurship, mobility and internationalization. The second session “Implementing the structural reforms in the third cycle” looks at the achievement in the introduction of qualifications frameworks, of transparency instruments and of quality assurance with special attention for Doctoral training and draws recommendations on how to improve the implementation of structural reform. The third session on “Implementing policy reforms in the third cycle” looks at the achievements of institutional, national and European policies on innovation of programmes, on employability, on internationalization and mobility and draws recommendations on further improvements[[1]](#footnote-2).

# Summary

In 2003, EHEA Ministers have commonly agreed that “The core component of doctoral training is the advancement of knowledge through original research” (Berlin, 2003). Hence a doctoral degree has to be focused on research training as well as on research production. Innovative doctoral programmes intend to bring innovative features to both aspects of the doctoral degree while stressing the fact that the current doctoral graduate should be a competent and skilled researcher, qualified for a further career in, as well as outside, academia. This implies among other features the expansion of the training dimension of the third cycle to interdisciplinary issues, and the acquisition of transversal skills. Nonetheless, innovative doctorate programmes never intend to replace proven ways of evaluating research production.

At their Bucharest meeting, **Ministers of the European Higher Education Area asked for policy recommendation on how to improve transparency, quality, employability, internationalization and mobility in the third cycle**. Within a broader framework of overseeing and improving the implementation of structural reforms in the EHEA under the responsibility of the Structural Reform WG (SRWG), the BFUG decided to develop the policy recommendation set by Ministers by setting up an ad – hoc working group on the Third cycle as a sub-structure of the SRWG. These recommendations are addressed to all EHEA participating countries, to their Ministers and to all participating Higher Educations Institutions.

*Development of transparency tools*. The Diploma Supplement, in the European format developed according to the European Commission, the Council of Europe and UNESCO guidelines should be available also in a widely spoken European language and it should be issued automatically and free of charge to all Doctoral graduates across the EHEA. In order to enhance its relevance to the third cycle, the DS should encapsulate the doctoral programme description, specific learning activities, thesis title and assessment, as well as mobility experiences, transferable skills, international cooperation activities that the student has been involved in and research projects the student has been a part of.

According to the specificity of the national context and where appropriate, higher education institutions could use ECTS for the third cycle for describing the workload to achieve expected outcomes[[2]](#footnote-3) at the end of specific training/learning activities, thus allowing doctorate holders to better promote their skills and competences to employers. They could also be used as one of the transparency and quality assurance tools for doctoral programmes. This is one of the issues where the working group did not reach consensus, with dissenting views arguing that the use of ECTS could generate a ‘race for credit’, which is seen as detrimental to the main purpose of the third cycle - advancement of knowledge through research. The main reason for this view is that the 'intended learning outcomes' at doctorate level cannot be as specifically defined as they can be in the first and second cycle levels.

However, where applied, outcomes could be defined for specific milestones in the third cycle, so as to ease mobility within the third cycle, and could amount to the outcomes included in the NQF level associated with the Doctoral diploma. ECTS could facilitate assessment mechanisms, be included in the types of assessment used for the progress on the research plan and help in monitoring the distribution of the workload for the candidate between different activities, where relevant. The use of ECTS could contribute to enhancing mobility for the third cycle, as well as facilitate the issuing of certification where doctoral students interrupt their studies or need valorisation outside of the academia of the skills acquired. However, the use of ECTS for the third cycle should to be handled with care. Doctoral degrees are based on individual research projects, which are difficult to divide in different parts to be assigned a certain number of credits. Similarly, ECTS would be difficult to assign to experiments with negative results or similar obstacles inherent to research.

Quality in Doctoral training refers to ensuring a supportive and inclusive research environment based on good supervision, on supporting the involvement of doctoral candidates in improving the overall quality of the programme, on applying independent and external peer review to assess outcomes such as originality, creativity and independence through the Thesis defence and on including in the internal quality assurance framework provisions about the supervision process and role in the candidates’ training. Therefore, the working group proposes for Ministerial consideration several guidelines that should be included in the national quality assurance framework for the third cycle. In addition, at EHEA level, QA frameworks for doctoral cycle should encourage synergies between “education” and “research” agencies, encourage the assessing agencies to take into account the ESG, the reference documents on doctoral training and the standpoints on doctoral training that the Ministers agreed upon in Bergen (2005), in addition to any other relevant ministerial commitments.

*Employability of Doctoral graduates.* HEIs and Research Institutions are cradle for the development of research and Governments should provide more stable and attractive career paths for doctoral holders. In order to increase the career opportunities of Doctoral graduates, the outcome of doctoral programmes should be a doctorate holder with a high level of research competences and a broad set of skills that help to develop his/her potential inside and outside the academic sector. For these achievements, the existing diversifications of programs should be further developed. Collaborations in Doctoral training between institutions and the non – academic sector, interdisciplinary programs, structured programs and promotion of self-employment and entrepreneurship, must become the practice of higher education institutions. Besides, making aware to the society of how doctorate holders can contribute to social progress and to the advancement in knowledge, innovation and productivity should be promoted and put in value by Governments, Institutions and Doctorate holders’ themselves.

*Internationalization and mobility*. The Countries and the HEIs participating to the EHEA should fully implement existing and future recommendations on mobility, by adapting them to the research-based approach of Doctoral training. An increase in the mobility opportunities is a qualitative element of the programme and an opportunity for further diversification and enrichment of the academic environment. Special attention should be paid by HEIs to the international profile of supervisors and to international mobility opportunities for them. HEIs should be encouraged to develop programmes and other forms of collaboration with international partners. Finally data collection on international mobility of doctoral candidates shall be improved.

*The challenge of data collection*. In order to further evidence-based policies on Doctoral training and further develop European level data, Ministers and HEIs should make an effort to collect more information and address statistical offices to elaborate sound definitions at the European level. The data collection should refer to the Doctoral programmes offered, to the number of candidates and their profile, to candidates’ international mobility and to Doctorate holder’s employment.

*Sustainable funding*. In order to ensure the sustainable development of the third cycle across EHEA countries, ministers should commit to ensuring sustainable funding for building the research capacity of universities. In this sense, the appropriate budget for research should be allocated primarily from public funds, while assuring transparent systems of funds’ allocation. European level funding for doctoral programmes should be awarded where European added value can be demonstrated and should not be used to replace national public investments.

In order to ensure the quality of the doctoral programmes through appropriate funding, the WG recommends to balance between strategic or targeted funding and independent funding (contributing to operational support), while raising the capacity to attract funds either from private or public source. Additional solutions to support further innovative doctoral programmes could be the design and offer of collaborative doctoral programmes with partnerships that contribute to the diversification of income and promote and implement a legal framework that ensures the independence of institutions receiving the money and the preservation of academic principles in research activities, especially when a private partnership is concerned.

*Implementing qualifications framework*. The Ministers should have further consideration for the third cycle while implementing national qualifications frameworks, with due consideration for the proper definition, implementation and assessment of skills and competencies. Furthermore, in order to enhance the meaningful links between the second and third cycle, the ministers should support second cycle programmes based on learning outcomes related to research and sparking the interest of students towards research. They should also facilitate the transition of students inclined towards research from the second to the third cycle.

# Draft text for the Communiqué

On the basis of the discussion held, the ad hoc working group on the third cycle suggest that the following should be taken into consideration when discussing future Ministerial commitment and the draft Yerevan Communiqué. The formulation reflects the complexity of the discussion held in the group and we leave to the working group on Structural Reforms and to the BFUG the task to further summarize the priorities reported.

“Doctoral training is the connection between EHEA and ERA and Doctoral graduates contribute to social progress, through the advancement in knowledge and innovation and the enhancement of productivity.

Governments and Institutions should commit to further realize the full potential of Doctorate graduates in the advancement of knowledge and innovation and make society aware of their contribution

National and institutional quality assurance frameworks for Doctoral programmes should be based on: supportive and inclusive research environments; provisions for strengthening the supervision process and role; independent and external peer review in research assessment.

Taking into account the research-based approach of Doctoral training, more mobility opportunities should be available for doctoral candidates and for supervisors, as support for increasing quality and diversification of the research environment. In addition, joint programmes or other forms of collaboration with international partners should be supported.

To increase transparency in Doctoral qualifications national qualifications frameworks should be duly defining the intended outcomes for the third cycle, and the Diploma Supplement should be available for all Doctoral graduates across the EHEA. Where in place, the use of ECTS in the Doctoral training should take into consideration the specificities of its research-based approach.

National and institutional regulations should facilitate the transition of talented students interested in research from the second to the third cycle, to increase the quality and the in-take of Doctoral candidates.

To increase Doctorate holders’ career opportunities in line with their research profile, collaborations between institutions and the non – academic sector, interdisciplinary and intersectoral programmes, structured programmes and promotion of self-employment and entrepreneurship must become a common practice of HEI’s.

Ministries and HE institutions across all EHEA countries should make an effort to collect comparable data on essential third cycle issues.

In order to successfully implement policy reform in the third cycle, Ministers commit to ensure its sustainable development across EHEA by funding HEI’s research capacity, balancing core and targeted funding, supporting the attraction and diversification of external funds either from private or other public sources.

# Mapping the implementation of the Salzburg Principles[[3]](#footnote-4) and the Principles for Innovative Doctoral Training[[4]](#footnote-5)

The present chapter serves the purpose to summarize and reflect on the achievements of the past ten years on third cycle education, to see priority after priority how far the EHEA has gone. It is based our reflections on the monitoring activities promoted by EUA, European Commission, EHEA Ministers, EURODOC and others (e.g. ENIC-NARIC etc.).Furthermore, the members of the working group shared information on the structure of Doctoral education, on quality assurance, on transparency tools, on employability and on internationalization in their countries. Lastly, all data available from UOE[[5]](#footnote-6) sources have been used to complete the picture.

## Improving quality and embedding doctoral education in institutional strategies

In the last ten years, HEIs made use of their autonomy and integrated doctoral training in their institutional strategies. This has been the first key factor to improve the quality of their doctoral programmes by allocating sufficient human, structural and financial resources, developing services for doctoral candidates, supporting training in research and embedding quality assurance of doctoral training in the overall quality assurance procedures of the institution. In addition, the Council for Doctoral Education of EUA has pointed out: the introduction of new supervision models and professional development for supervisors; the development of internal regulations and codes of practice as well as agreements signed between the Doctoral candidate, the supervisor and the institution; the improvement in standards of access, recruitment and selection; the regular monitoring of each Doctoral candidate’s progress, including time to degree and completion rates, and the tracking of Doctoral graduates; the improvement of standards for the thesis defense[[6]](#footnote-7); the introduction of internal audits, of programme accreditation systems, and of research assessments[[7]](#footnote-8).These trends have been confirmed by the ARDE Survey as, for example, 52% of the ARDE respondents systematically monitor the quality of career development support for doctoral candidates. However, only 23% of Institutions monitor the career of PhD graduates (for 3-4 years after graduation).

More and more, Institutions reconsider the role of supervision in the quality of the outcomes of a Doctoral program. Institutions care for the international profile of their supervisors and set up training opportunities for conducting their role (EUA, TRENDS 2010, 2010). Improving the quality of supervision is perceived as a “win – win” dialogue between the supervisors and the Institution aimed at quality enhancement (EUA, ARDE, 2013). In addition, the emerging supervision strategies (team supervision, training for supervisors, structured programmes[[8]](#footnote-9), and involvement of non-academics…) have positive impact on other policies such as academia – industry cooperation, employability, self-entrepreneurship, internationalization.

As far as the assessment of doctoral candidate is concerned, the most widespread method for the assessment is centred on the evaluation of the final thesis and its defence by the Doctoral candidate. In addition, institutions have developed processes to monitor the candidate’s research production and the progress in carrying out the research programme. The research production is assessed via traditional and proven ways of quality assessment, such as the peer reviewing of their scholarly articles, selection by committees of peers of conference papers, expert reviews of monographs and edited books. The evaluation of the progresses in the research programme mainly consists of activities for the candidate to present the mid-term results of the work and of regular progress reports, which might be formally approved by the supervisory team or by the scientific committee of the programme.

In terms of assessing the programme and its research environment, some of the following indicators are used: scientific publications, staff qualifications, impact on society, relations with private sector, level of internationalization, funding, completion rate, satisfaction etc.

Generally speaking, national policies on quality assurance and European coordination in defining standards and guidelines for quality assurance have been developed until now separately from and parallel to the third cycle. Especially at the European level, the European Standards and Guidelines are developed to address education matters and less the research dimension implied by the doctoral training. Nevertheless, few countries apply the approach of the ESG to Doctoral programmes as well. On the other side, a wider number of countries base their quality assurance of Doctoral training mainly, if not exclusively, on the research results achieved. Finally, Doctoral programmes are also subjected to other forms of external evaluation by external financial supporter[[9]](#footnote-10). This results in heterogeneous and sometimes burocratic quality assessment, as many actors from both higher education and research sectors come into play without taking into account each other’s work.

It is of utmost importance that (aiming at the best quality possible) the improvement of quality of doctoral programmes and their embedment into institutional strategies concern STEM as well as SSH fields of research. It has to be emphasized that innovative PhD programmes constitute a clear asset for all types of doctorates and PhD researchers, irrelevant of the discipline. Indeed the Flagship initiative “Innovation Union” of the Europe 2020 Strategy duly acknowledges the importance of “social innovation” (i.e. innovation in social organizations and social processes), alone or in conjunction with “technological innovation”.

## Raise of structured and innovative training

The main outcome of a Doctoral programme is a doctorate holder who developed through his/her research project the mind set as well as a broad set of skills and competencies that allow releasing the professional potential of the Doctorate holder in both academic and non-academic sector. More attention has been given to increase the number of candidates, to ensure supportive research environment, to interdisciplinary, to supervision, to internationalization and to improved employability. In parallel, transferable skills as communication, research and valorisation, career management, and efficiency and leadership are an integrated part of doctoral training. These elements have been push factors for new ways of structuring doctoral programmes. As a matter of fact, institutional practices showed two emerging trends in terms of Doctoral training provision. „Structured doctoral training” leads to clearer governance structures and policies at the institutional level concerning admission, quality assurance, assessment, supervision[[10]](#footnote-11). In parallel, sometimes as interlinked strategy, institutions embedded training activities in the discipline or in transferable skills leading to „structured Doctoral programmes”[[11]](#footnote-12). Structured doctoral training and programmes have usually been introduced through the creation of Doctoral Schools.

Thus, in the last decade, the majority of European higher education institutions experimented the introduction and funding of graduate or research schools. According to the ARDE project results, 82% of participating institutions affirm to have doctoral schools at some level.

In many cases, doctoral schools are organised for training doctoral candidates within one discipline or a group of related disciplines. In this way, the individual research specialisation of doctoral candidates in their subjects is accompanied by a cross-curricular study programme that aims to develop general competences. In other cases, training of Doctoral candidates is offered in the form of taught courses (according to EUA, 49% in TRENDS V; 72% in TRENDS 2010).

More diversification, though, should be reached by diversifying the skills acquired by Doctoral candidates during their training and by complementing them with competencies common to all fields that are likely to make a doctorate holder more employable. Some of them relate to communication, negotiation and management skills. However, potential employers may be less aware of other skills acquired during the doctoral process, such as adaptability, the capacity to deal with complex problems and to engage in multidisciplinary work and, often, the experience of working in international environments. In this regard, inter-sectorial mobility plays an important role.

## Combining the advancement of knowledge and the exposure to labour market

The Salzburg II Principles and the Principles for Innovative Doctoral Training underline the fact that Doctoral training should also open up to the non-academic world and its outcomes should be relevant for the labour market (including industry, public sector, services organizations, etc.). According to the DOC – CAREERS project (2009)[[12]](#footnote-13), the HEIs engaging in collaborations with the non-academic sector focussed on the involvement of business and industry. Based on the level of involvement of the non-academic sector, there are Doctoral programmes with limited involvement of industry and collaborative doctoral programmes (industry experts take part in the supervisory committee, officially or informally), including the mentioned industrial doctorates.

Also in the Bologna Process Implementation Report 2012 several EHEA countries indicate the existence of collaboration with the labour market in Doctoral programmes, for example in Denmark, in France, Ireland, in Romania, in the United Kingdom, in Sweden or in Azerbaijan. These programmes also help overcome many medium and small businesses’ reluctance to include university research and innovation in their business, often due to the non-representation of higher education in management or lack of previous experiences in similar partnerships. On a smaller scale, HEIs engaged more with SMEs by encouraging placements and training experiences in SMEs, where coherent with the research programme of the PhD candidate.

## Entrance of Doctoral graduates in the employment market

Employability and entrepreneurship of candidates are two concepts transversal to the Salzburg Principles and to the Principles for Innovative Doctoral Training. As Ministers committed to in Bucharest, employability and self-employment should stay a priority in Doctoral training policies.

Generally speaking, the number of doctoral candidates in Europe has risen significantly in recent years and will continue to rise in the years to come, but they are still a low proportion of the total labour force. Higher education is still the largest employment sector for PhD holders (OECD, 2013: 12). Even though only a minor part of new doctoral candidates can expect a career in academia, it is still the norm to pursue one, leaving many disappointed and not optimally prepared for endeavouring on other career paths (Vitae 2013, 11). When looking at the position occupied by Doctorate holders outside academia, the situation differs widely between EHEA countries. In some countries, like Germany and the Scandinavian countries, they occupy positions as early stage researchers. In others they are asked to perform tasks that are typical of a second cycle graduate, even if, as concluded by the ARDE Project, the value of a doctorate in terms of career advancement in both academia and the private sector is high. On the other hand, careers in academia appear to be very unstable and mainly based on temporary contracts, at least at their early stage. Available data show that for recent doctorate holders temporary contracts are common (OECD, 2013: 10).

A wide spectrum is observable in relation to earnings. In general those in the medical and health sciences are paid above the average in most countries, while those in agricultural sciences and the humanities earn below average[[13]](#footnote-14). Gross annual earnings of doctorate holders employed as researchers exceed those of non-researchers, but this varies across countries as well1.

## Increasing mobility and international networking

Ministers of the EHEA have been encouraging internationalization of curricula and international cooperation of HEIs from the very beginning. Even more, around international mobility of students there is the target of the 20% of graduates with a mobility experience to be reached by 2020. The benefits that are usually referred to when discussing of mobility - personal growth, enrichment of the academic experience, development of better skills and competencies, indirect benefit for the whole institution - are obviously valid for the third cycle, as the search for innovative research outcomes which are relevant for the international academic community implies internationalization of programmes, mobility of candidates and internationalization of the academic staff. The mobility of doctoral candidates, of early stage researchers and of supervisors for Doctoral candidates was seen as vital in offering key benefits in terms of academic achievement and career development.

Unfortunately, on this matter, there is a scarcity of reliable data sources available to describe the existing picture. On the more qualitative front, the EUA MAUNIMO project (2012), based on peer analysis and study cases, shows that institutions find mobility most relevant for the third cycle but that they pay higher attention to the first and the second cycle, where bigger number of mobile students has to be processed.

In addition to mobility, the level of international cooperation between HEIs in Doctoral training increased in the majority of EHEA countries through joint and double Doctoral degree programmes. In parallel, but the availability of data is less consistent, institutions supported the creation of Doctoral thesis in “co-tutelle”.

As happens for the first and second cycle, international mobility is also a challenge for institutions as it is one of the main channel for brain drain and many are worried about losing good doctoral candidates to other institutions. As brain drain is affected by other societal and economic conditions going beyond higher education and research policies, like economic development or openness of the society, some institutions have tackled the issue by developing capacity building initiatives and integrated policies to counteract the phenomenon[[14]](#footnote-15).

## Status of the Doctoral candidate

Doctoral candidates can be given the legal status of students, early stage researchers employed by the university, lecturers or assistant lecturers, employees of a company[[15]](#footnote-16) or even have a mixed status. In some countries, they have a dual status of both students and employees. The European Charter for Researchers and The Code of Conduct for Recruitment recommend that researchers at all levels (including doctoral candidates) should be recognised as professionals and treated accordingly. Furthermore, even if working on the frontier of knowledge is an individual task almost by definition, it is also true that, to overcome all the challenges on the way, the Doctoral candidate shall develop a flexible and open mind set. To ensure this, Doctoral candidates are supposed to work in a creative environment, where a critical mass of research is provided. According to the most recent data (EUA, TRENDS 2010, 2010 and EUA ERA report 2013), the traditional master-apprentice model has been replaced by a higher degree of professionalization and institutional engagement in order to respond to national and international competition as well as to employment trends with more Doctorate holders entering the non-academic labour market.

# Implementing structural reforms in the third cycle

## Qualifications framework

Qualifications frameworks play a key role in developing the EHEA,as they facilitate recognition of qualifications and mobility and support program design on the basis of generic descriptors for each cycle, of learning outcomes and of competencies. For the third cycle, EHEA Ministers have commonly agreed that “The core component of doctoral training is the advancement of knowledge through original research” (Berlin, 2003[[16]](#footnote-17)) and that “doctoral programmes should promote interdisciplinary training and the development of transferable skills to meet the needs of the wider labour market” (Bergen, 2005 and Leuven, 2009[[17]](#footnote-18)), while “Doctoral level qualifications need to be fully aligned with the EHEA overarching framework for qualifications using the outcomes-based approach” (Bucharest, 2012[[18]](#footnote-19)). Thus, national qualifications frameworks should include third cycle corresponding qualifications, since they increase transparency and provide learned outcomes descriptions useful for employers, while ensuring comparability and attractiveness of EHEA doctoral programmes. In this light, we recall that Doctoral education is the first step for a research-based career, but it is also embedded in the three cycle system of the EHEA and this connection should be kept in mind by those responsible for programs development at the first and second cycle.

In this context, the third cycle WG has looked at how European QF frameworks address the third cycle and what should be taken into account so that the usage of this Bologna Process tool is meaningful for doctoral programmes. The reasons why third cycle qualifications should be integrated in NQFs include the need of an instrument for proper planning of intended skills and competencies to be achieved at the end of the doctoral training and, consequently, the need for supervision and evaluation of their achievement by the candidate (currently progress reports are mainly used). In addition, integration in NQFs promotes smoother recognition of doctoral diplomas across the EHEA.

As said in the opening chapters and as showed by the Implementation report[[19]](#footnote-20), third–cycle studies differ substantially across Europe both in structure (whether they are within a university or an independent structure with its own organization), profile, length, use of EHEA tools such as ECTS or DS etc. However, the ministerial communiques mention that the normal workload of the third cycle in most countries corresponds to 3-4 years full time (Bergen, 2005[[20]](#footnote-21)), while it is recommended to avoid overregulation of the doctoral programmes (Berlin, 2003).

The second cycle should give access to the third cycle (Bergen, 2005[[21]](#footnote-22)). Upon admission (dependent on institutional and national admissions procedures), participants in third cycle programmes are considered both students and early stage researchers (Bergen, 2005) as, according to the Salzburg II Recommendations in 2010, research should be the basis and the difference from the other two cycles, as well as giving space for the researcher to individually develop in a framework created within the autonomy of the organizing higher institutions and in accordance with their mission and strategy

In the EHEA, third cycle programmes qualifications of some countries[[22]](#footnote-23)should be referenced against two overarching qualifications frameworks: EU’s European Qualifications Framework for lifelong learning (EQF) and the EHEA Overarching Framework of Qualifications of the European Higher Education Area (QF-EHEA), that have many similarities. National qualifications frameworks can be developed so that they are compatible with both overarching frameworks.

However, the aims that these overarching frameworks were built for were slightly different when it comes to the third cycle, and this is also obvious in the language used.

|  |  |
| --- | --- |
| **QF-EHEA** | **EQF** |
| • 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. | • The most advanced knowledge in a field of work;  • Advanced and specialized skills and techniques;  • Knowledge and solving critical problems in research;  • Substantial authority, innovation, autonomy, scholarly and professional integrity;  Sustained commitment to the development of new ideas. |

Since the purpose of the doctoral cycle seems to be captured in a comprehensive way in the QF-EHEA description, it would perhaps be beneficial that the two overarching frameworks would harmonise the language used for describing the third cycle.

The core of doctoral education, research under supervision, is often supplemented with taught courses for specific skills and competences, ranging from research ethics over specialist knowledge to transferable skills. Structured doctoral programmes were present in nine EHEA countries, according to the Bologna Process Implementation Report, 2012. Doctoral schools have developed recently in more than 30 countries around Europe, for the training of doctoral candidates in a discipline or a group of related disciplines, offering the framework of cross-curricular study for development of general competences.

In several countries, third-cycle programmes may lead to industrial or business-oriented doctoral degrees (Denmark), professional doctoral degrees (Ireland, Romania and the United Kingdom) or PhDs in the arts (Sweden). Their duration is usually prescribed at three-years, though not all countries regulate this.

|  |
| --- |
| **The WG recommends that:**   * **In the process of NQF implementation, attention should be paid to proper definition, implementation and assessment of intended outcomes for the third cycle (defined as expected outcomes to be reached at the graduation of the PhD programme in terms of: researcher specific skills, professional/specialist knowledge and transferable competencies that the PhD candidate is expected to develop during the doctoral training with the help of the supervisor);** * **In the future, coherence between QF-EHEA and the EQF should be enhanced for the third cycle/ level 8. This could be also done through the design of national qualifications frameworks, which specify more in detail what are the intended outcomes of the third cycle, in line with QF-EHEA;** * **Clarify the status of Doctoral and post-doctoral qualifications used in most CIS countries in relation to QF-EHEA and EQF (e.g. the existing candidate nauk/dr nauk system). In case specific NQFs choose to include post-doctoral qualifications at a higher level than the third cycle, this should not limit the access of foreign academic staff from countries without such qualifications.** |

## The connections between the second and the third cycle

In the Bucharest Communiqué, the ministers of Education state: “Next to doctoral training, high quality second cycle programs are a necessary precondition for the success of linking teaching, learning and research. Keeping wide diversity and simultaneously increasing readability, we may also explore further possible common principles for Master programs in the EHEA, taking into account previous work”. With the mentioned issue, the Ministerial commitment touches upon the connection between the second and the third cycles. The definition of a Doctoral program as “training to research through research” is shared by all the components of our group, as well as the idea that second cycle programs are still too narrowly focused on cumulative learning, rather than research activities. This distinction between second and third cycles leads to misunderstandings about the status of Doctoral training in the Bologna process, given its substantial focus on research and research training. There is no doubt that a Doctoral program is and must be training to research through research and, then, it is the first step for a possible research-based career. However, the level of achievement of the skills and competences by the Doctoral candidates rely also on the second cycle programmes they have followed. As a matter of fact, as it was recalled in other paragraphs, EUA clearly states that “The first two levels should be looked at also from the perspective of those who will continue on to pursue Doctoral education” (EUA, TRENDS 2010).The need for a better integration between the second and the third cycle is based on two sound reasons. The first is the need to improve the overall quality of doctoral candidates by better shaping the second cycle, as a pre requisite for accessing the third cycle. The second reason is to facilitate the Doctoral graduates insertion into the labour market. These two issues can be tackled with several intertwined actions.

First of all, in order to successfully and timely pursue one’s professional and research oriented career, the Doctoral project should remain within the 3-4 years range stated in the Bergen Communiqué. Secondly, candidates’ selection shall take place in a moment of the academic year which can ensure a rapid move from the graduation in the second cycle to the enrolment in the third one. Thirdly, it should be underlined that the successful achievement of certain competences in the third cycle depends strongly on how they have been learnt in the previous cycle. On this issue, it has been underlined that Doctoral training shall lead to the achievement of specific expected outcomes and that Doctorate holder should be a qualified researcher with a broad set of skills and competencies that help release its potential in relation to the academic and non-academic market. All the European reference documents - the Salzburg Principles, the Salzburg II Recommendations and the Principles for Innovative Doctoral Training – address these specific points, such as the introduction in the doctoral program of activities to provide a wider exposure to the labour market.

In addition, if doctoral programs are training to research through research, the WG suggests that, taking into account present diversity in second cycle programmes, some second cycle programme should have more expected outcomes related to competences useful for continuing in the research field. In any case, this would be a help also for second cycle graduates who will not go in a Doctoral program, but who nevertheless would profit very much from a qualified, although necessarily short, period of research.

Last but not least, improving vertical mobility between the second and third cycle and incentivizing young people to move from one university to another one inside the EHEA bring the question of the level of qualification reached at the end of the second cycle. In the age of globalization, the doctoral candidates can arrive from everywhere and can have very different backgrounds. So, it seems extremely timely to reconsider the statement of the Bucharest Communiqué about a better integration between teaching, learning and research. This is particularly timely also on the light of the process – unfortunately too slow – of enhancing the links between the EHEA and ERA.

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| **The WG recommends that HEIs should continue to develop second cycle programmes based on outcomes related to research and should encourage and facilitate the transition of students who demonstrate attitudes towards research from the second to the third cycle.** |

## Transparency instruments for the third cycle

In order for third cycle to become comparable across the EHEA, while preserving its diversity across the member states, the use of adequate transparency tools was deemed essential by the working group. There is no consensus on using the same transparency tools as for first and second cycles, however the existing tools (such as the Diploma Supplement and ECTS) could, under certain conditions and where deemed adequate, be used to make more understandable the special characteristics of doctoral education and training of EHEA doctoral programmes, in close connection with other tools such as qualifications frameworks and quality assurance arrangements. The present chapter introduces the status-quo on the use of such transparency tools and makes recommendations on how to make existing EHEA tools more suited for the special character of the third cycle.

### The use of Diploma Supplement.

Already since 2003, EHEA Ministers committed to provide the Diploma Supplement, automatically and free of charge, as well as in a widely spoken European language to all graduates. Following the general commitment, in many countries the obligation has de facto been extended to Doctoral graduates as well, with the aim of making Doctoral degree more understandable for employers without focusing intensively on academic standards or on the progression to post-doctoral programmes.

A first partial mapping of the EHEA countries/ HEIs issuing Diploma Supplement for the third cycle, as well as on the templates used, was accomplished through the responses to the third cycle questionnaire provided by BFUG members, the responses from Diploma Supplement experts provided by the European Commission and information from the ENIC-NARIC offices.

The research mainly shows that the situation is very diverse in EHEA countries. The exercise gathered 35 country responses, 16 countries awarding Diploma Supplements to graduates completing their doctoral studies, 13 countries not awarding the DS and 6 countries partially awarding the DS in some higher education institutions or at request[[23]](#footnote-24).

The analysis undertaken by the working group on third cycle has revealed some good-practice examples: countries in which the DS is available also in a widely spoken European language, free of charge; countries in which the DS lists all the information regarding the specific curriculum of doctoral graduates, specific learning activities, thesis title and any other learning activity in the context of the doctoral program; countries in which the DS lists which teaching obligations the student has had, international cooperation activities that the student has been involved in and what research projects the student has been a part of.

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| **The WG recommends that:**   * **the Diploma Supplement, in the European format developed according to the European Commission, the Council of Europe and UNESCO guidelines, should be available also in a widely spoken European language, automatically and free of charge for all Doctoral graduates and encourages Ministers should explicitly extend their commitment to Doctoral graduates;** * **as foreseen in the guidelines, the DS template should encapsulate the doctoral programme description, specific learning activities, thesis title and assessment, as well as mobility experiences, transferable skills, international cooperation activities that the student has been involved in and research projects the student has been a part of;** * **Institutions shall make the best use of the existing transparency tools, such as the Diploma Supplement and ECTS, to make visible all the competencies and skills achieved by candidates.** |

### The use of ECTS

The starting point to consider the use of ECTS in the third cycle is that we refer to an additional tool to support a “candidate centred” planning of Doctoral training and to support the provision of relevant information on programmes offered. In addition, recent trends in Doctoral education mapped by the ad-hoc WG on the Third cycle show that, in a third of countries of the EHEA (18), ECTS system is used also in Doctoral education and that, in another third, it is not regulated by the legislation but HEIs can use it, if they consider it appropriate. There is clear diversity in the use of this tool between disciplines.

Furthermore, as shown in the previous part, there are increasing numbers of Doctoral programmes which have more structured activities or which foresee complementary training to improve transversal skills. An increase in number of institutions that are offering taught courses (according to EUA, 49% in TRENDS V; 72% in TRENDS 2010) and structured Doctoral programmes at institutional level has been registered in recent years.

Nevertheless, to ensure that a transparency tool is used adequately, we should ensure that all institutions/systems deciding to implement it follow the same guidelines. The new version of the ECTS Users’ Guide should recommend that ECTS for the third cycle is used for[[24]](#footnote-25):

* Describing the workload to achieve expected outcomes in terms of specific skills and competencies that the PhD candidate is expected to acquire at the end of specific training/learning activities (such as taught classes to deepen the disciplinary expertise or to improve transversal skills) with the guidance of the doctoral supervisor, without hindering the focus on the research activity and the original work. In addition, outcomes should be defined for specific milestones in the third cycle, so as to facilitate mobility within the third cycle. Cumulated, these outcomes would amount to those specific to the NQF level associated with the PhD diploma;
* Monitoring the distribution of the workload for the candidate between different activities (attending classes, spending time in laboratories, teaching to students from previous cycle etc.). However, monitoring activities should not entail imposing a strict limit of the time spent on various activities, but they should guarantee an adequate balance between these activities, in line with the profile and needs of the doctoral candidate and the specificities of the doctoral programme and in order to encourage future employability of the PhD graduate;
* Facilitating assessment mechanisms such as exams (in case of thought courses), or milestones or, more simply, being part of the yearly report that usually candidates have to produce to show the fulfilment of the research plan;
* Facilitating mobility;
* Allowing candidates who drop out to have some certification on what they have achieved in the third cycle prior to interrupting their studies so as to facilitate a possible academic reinsertion as well as the valorisation of the acquired skills outside of academia.

On the other hand, the use of ECTS is to be handled with care in the third cycle as the cycle is based on individual research projects, which are by nature not possible to divide in different parts so as to be assigned a certain number of credits. Moreover, the main outcomes from doctoral education are not cumulative and can’t always be pre-defined, but emerge from doing research. The risk of using ECTS for all parts of a doctoral programme is that doctoral candidates could engage in a ‘hunt for credits’, instead of focusing on research-related activities. The Salzburg II Principles explicitly recommend not using ECTS for research and argues for caution when applying ECTS to taught elements within the third cycle. As there is no consensus between countries, HEIs and Doctoral candidates in the EHEA regarding the use of ECTS for the third cycle, it should remain clear that the use of ECTS for Doctoral training depends on national contexts and institutional preferences and that the guidelines included in the text are meant only for those HEIs or systems which apply it.

As there is no consensus[[25]](#footnote-26) regarding the use of ECTS for the third cycle, it should remain clear that the use of ECTS for Doctoral training depends on national contexts and institutional preferences and that the guidelines included in the text are meant only for those HEIs or systems which apply it.

Further work on using intended outcomes defined as specific skills and competencies the PhD candidate would look for during the doctoral training with the guidance of the doctoral supervisor, for enhancing the transparency of the third cycle should be further employed. Specific references to this topic are made in the qualifications frameworks chapter, as well as in the quality assurance chapter of this report.

## Promoting quality and improving quality assurance

EHEA Ministers assumed during the Bucharest Ministerial Conference the increase in quality of Doctoral training and, as general standpoint, wider access to Doctoral training should not correspond to a decrease in the quality of the training itself[[26]](#footnote-27). In section one of the report, we have summarised the main trends concerning quality assurance policies in the last ten years.

Based on the above described status-quo, the ad hoc working group on the third cycle has developed a series of proposals for the ESG revision process. The ad hoc working group members agreed that a key factor for a successful strategy to develop and improve the quality of doctoral training is the integration in general institutional strategies (as far as internal QA is concerned). An appropriate representation of the third cycle in the European Standards and Guidelines (ESG) is important, thus making them more relevant to the third cycle as part of the higher education continuum. However, since the input might be considered too detailed for the ESG, the suggestions included below shall be considered as part of a set of guidelines specific for third cycle quality procedures, complementing the existing arrangements in place for research activities in each member state/ institutions.

The WGs’ Comments to part one – Internal QA- refer to the development of Strategies for QA referring also to the doctoral education. In addition, the comments proposed aimed at guaranteeing the coherence between the frameworks for quality in education and research and at including instruments for development and update of relevant doctoral programmes, using as a reference the Dublin descriptors. Moreover, they encourage the doctoral training to be designed in terms of intended outcomes and described in accordance with the national qualifications framework, as well as being submitted to processes of accreditation, monitoring and periodical review.

Concerning external quality assurance procedures and accreditation, the European trends confirm in a way what happens at the institutional level. External evaluation and, where it exists, accreditation of Doctoral programme, is mainly done by Agencies responsible for research and not by agencies responsible for teaching. External evaluators can, however, be seen as top-down intrusion, which does not give motivation to deliver a sound quality culture – although they can be the product of a constructive dialogue involving all partners.

The WGs’ Comments on part two – external QA of the ESG underlined the fact that the national context should be respected, thus the external assessments should be done accordingly, by agencies responsible for teaching, for research or both.

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| **The WG recommends that guidelines for quality assurance in the third cycle should include principles that will guide institutions to:**   * **support high research standards and originality of the research project, encourage that Doctoral programmes have sufficient resources, critical mass of research, a supportive and inclusive research environment based on good supervision;** * **support the involvement of doctoral candidates in improving the overall quality of the programme, as a key element to quality assurance within the third cycle;** * **apply independent and external peer review to assess originality, creativity and independence of the research through the Doctoral programme, with special attention to the thesis defence;** * **include dedicated procedures in order to ensure retention and timely completion;** * **Include in the internal quality assurance framework provisions about the supervisors’ competencies and role in the candidates’ training (e.g. international training and mutual learning experiences should become an integral part of the training of doctoral supervisors, in order to benefit from the existing good practices in different higher education systems).**   **The WG recommends that external evaluation of quality assurance in the third cycle:**   * **encourage synergies between “education” and “research” agencies;** * **encourage the assessing agencies to take into account the ESG, the reference documents on doctoral training**[[27]](#footnote-28) **and the standpoints on doctoral training that the Ministers agreed upon in Bergen (2005)**[[28]](#footnote-29)**, in addition to any other relevant ministerial commitments;** * **incentivize the development of systems for improving quality assurance of doctoral education and contribution to the research done to assess their effectiveness.** |

# Implementing policy reforms in the third cycle

## Introduce innovation in the curriculum development

The Doctoral candidate is working on the frontier of knowledge by definition, and to overcome all the challenges on the way, he/she shall develop a flexible and open mind set. To ensure this, Doctoral candidates are supposed to work in a creative environment, where a critical mass of research is provided. Furthermore, the doctorate holder should be a qualified researcher with a broad set of skills and competencies that help release their potential in relation to the academic and non-academic sector. A stimulating research environment is vital for the quality of the research result. Transferable skills, interdisciplinary, valorisation of research, career management, self- entrepreneurship and leadership are more and more an integrated part of doctoral training. All these elements are usually achieved by Institutions with the set-up of Doctoral Schools.

Another way for offering doctoral students transferable skills and provide career development options is to foresee a portion of structured training, including credited coursework, in the program and develop new supervision methodologies that promote, not only the progress in research, but the other skills that a Doctorate holder should achieve[[29]](#footnote-30).

Similar, or complementary, skills can be achieved with international mobility. As a matter of fact, a strong driver for carrying a period abroad while doing a research project is the possibility to enrich it with what can be offered by other HEIs, other research groups and/or other research infrastructures that are not available in the home institution.

In addition to that, as previously discussed, collaboration with non-academic sectors, e.g. business or other public or private institutions, can be a good way not only to provide career development opportunities, guidance and support in non-academic sectors for the doctorate holders, but also to contribute to changing the perception of doctoral training among employees and employers[[30]](#footnote-31). They may also be established to facilitate multidisciplinary studies, providing the necessary transversal skills, and/or a platform for cooperation of doctoral students. HEI should offer career guidance.

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| **The working group recommends that:**   * **Institutions should increasingly include activities leading to transferable skills, interdisciplinary, valorisation of research, self – entrepreneurship and leadership in their programs, by making use of structured training and Doctoral schools;** * **Institutions should increasingly design and implement PhDs developed and funded in cooperation with non-academic entities, while ensuring their genuine research projects and assessment according to high research standards;** * **Institutions should make the best use of the existing transparency tools, such as the Diploma Supplement, Qualifications frameworks and ECTS, to define and make visible all the competencies and skills achieved by candidates.** |

## Diversify career opportunities (employability and self-employability)

Aside from what has been described in the first chapter of the report, the relation between doctoral candidates/holders and the non-academic labour market is also characterized by the specificities of the European job market comprising a high share of small and medium enterprises (SMEs), in some countries even micro or family-run enterprises.

Finding ways of overcoming the lack of awareness of Doctorate holders’ competencies outside academia is a task both for universities, for doctoral holders themselves and for national authorities. Doctoral candidates sometimes find it difficult to identify and explain how they distinguish themselves other than by their expertise in their field of research. At the same time, in most of the cases, owners or managers of SME have neither a high education degree nor a relationship with university research, a fact that makes more difficult to appreciate and reward the added value of PhD training in their business. It is also true that SMEs, for structural reasons, are reluctant to make long term investments in R&D activities and – for this reason – HEIs find it easier to start cooperation with new SMEs at the second cycle to, later, propose initiatives at the Doctorate level.

As Ministers committed to in Bucharest, employability should stay a priority in Doctoral training policies. In order to make the most of government investment in doctoral training, it is necessary to focus on how doctoral candidates can be better prepared for a variety of careers through a diversification of profiles and of learning/training opportunities.

At the same time, letting the Doctoral candidate to become familiar with the private sector is considered to be very important in promoting employability by encouraging intersectoral mobility and collaboration. Creating ties with non-academic employers as part of regular doctoral education is a way to promote non-academic careers while simultaneously enhancing candidates' employability and research dissemination to the general public.

Supporting entrepreneurship and promoting self – employment is also one of the priorities mentioned in the Bucharest Communiqué by Ministers when committing on how to improve employability to serve Europe’s needs. In most countries where entrepreneurship is promoted, it is done for secondary education and for all levels of higher education including bachelors, masters and doctoral degrees as well as vocational education[[31]](#footnote-32) (FUE, 2012a, b). Essential to both entrepreneurship and the employment of doctorate holders is the creation of spin-offs. Many spin-offs are established in technology-based industries where doctorate holders are perceived as highly qualified and highly necessary employees.

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| **The WG recommends that:**   * **Awareness in society of how doctoral candidates can contribute to social progress, the advancement of the knowledge, innovation and productivity across sectors shall be promoted by Governments, Institutions and candidates themselves;** * **Governments should consider valuing Doctorate holders by encouraging the creation of job opportunities and career pathways for PhD holders;** * **Governments should consider valuing Doctorate holders with regard to employment and career development in public institutions** * **Higher Education Institutions (HEIs) and Research Institutions, are cradle for the development of research and research talent, thus, promoting employability outside academia goes hand in hand with opportunities for HEIs and Research Institutions. Focus should be brought to the negative impact of the wide spread use of temporary contracts in academia and its impact on the attractiveness of the careers in academic research. Extended use of measures like tenure track and open recruitment can contribute to more stable and attractive career paths in academia and research institutions for doctoral holders;** * **Ministers should incentivize and institutions should provide career guidance and services, knowledge transfer services, start-ups spin-offs, incubators and science parks to support innovation and Doctoral graduates entrance in the labour market;** * **Lifelong learning opportunities for PhD holders should be developed by HEIs in order to ensure a permanent update and improvement of their competencies and skills on an ever dynamic employment market;** * **Mentoring for career development in addition to supervision of the research could be considered a good practice;** * **Where possible, doctoral programmes could be organized in such a manner that they allow the doctoral candidate to undertake some research stays in non-academic environments. Opportunities for developing and funding PhD programmes in collaboration with private entities should be encouraged;** * **SMEs should be treated as specific target group for actions, as they have different needs and expectations and as they might have more difficulties in communicating with academia.** |

## Internationalise, internationalise, internationalise

Internationalization and mobility have been a flagship of the Bologna Process and the EHEA from the very beginning. To strengthen the overall policy goal, Minister set the target of the 20% of graduates with mobility experience by 2020 and, in 2012, they approved the Mobility strategy for the EHEA. Between 2009 and 2012, the BFUG work plan[[32]](#footnote-33) dedicated special attention to the quality of students’ mobility and the increase in staff mobility. Depending on the national and on the institutional context, institutional strategies to improve the quality of mobility and to promote staff mobility should always include Doctoral candidates[[33]](#footnote-34).

The starting point to increase the mobility experiences of Doctoral candidates shall not be a mere quantitative target, even if – as we will argue later – setting a target can stimulate actions in countries and institutions. Mobility periods should be meaningfully integrated with the research to be carried out as qualitative element of the programme and as opportunity for further diversification and enrichment of the academic environment. All candidates whose research project would benefit from a mobility experience should be enabled to do so.

Policies and practices on mobility of staff and students, as mentioned in the proposed recommendations, underline several aspects that, for Doctoral training, can be summarised as follows. International mobility of candidates shall be encouraged and embedded in the Doctoral training. The mobility period shall be properly prepared in advance, possibly on the basis of an inter-institutional agreement, with the support of supervisors in the home and in the host institution, in order to ensure the integration with the research project. Adequate financial resources to face the additional costs to carry on the project in another country should be granted. The host institution shall commit to provide adequate support services and a stimulating research environment. The home institution shall include in the Diploma Supplement the international mobility experience. Good support tools to plan and realise short term mobility are the Erasmus tools for placements: institutional agreements, placements agreements and transcript of records, which can also take upon the role of transparency instruments for the promotion of mobility opportunities both for PhD candidates and their doctoral supervisors.

In terms of degree mobility, brain circulation is clearly important for Doctoral training as the most brilliant minds shall reach the best institution for their research field. The two main obstacles, aside from financial support, are administrative (heavy bureaucratic procedures and visa issue) and recognition of previous education. At the national level, countries participating in the EHEA shall commit to progressively eliminate obstacles related to visa issue that act as a barrier to the PhD candidates and doctoral supervisors’ mobility, by simplifying the procedures. As Doctoral candidates are on average more mature than first or second cycle students, an additional obstacle to mobility is the lack of arrangements for family members. Visa procedure at the national level should take into account this element as well. Long mobility periods can be specifically difficult for researchers with young children. Therefore flexible approaches to mobility should be promoted, allowing multiple short term periods of mobility besides long stays abroad.

HEIs on their side shall improve the recognition practices, by making full use of the QFs and the QA procedures in place. Upon completion of the Doctoral training, recognition of the achieved qualification for further academic career should follow the principle that, if a qualification gives access to further research or teaching position in the home country, it should be equally treated in the host country, without further need for accreditation or similar (prescription that should also be applied in the case of certification of Doctoral Nauk beyond third cycle).

A cross – cutting issue to increase candidates’ mobility between countries and support the attractiveness of the EHEA relates to the visibility of Doctoral programmes offered. Some countries[[34]](#footnote-35) have in place or are developing national databases with all Doctoral programmes offered. This is made easier where a national programme accreditation for Doctoral programme is in place as there is one single source of information. In any case, according to the national context, the relevant authority (accreditation entity or HEIs) shall be encouraged to make available to possible candidates, and to the public, information related to selection and admission procedures, financial support available, expected outcomes and information on the programme, research environment, as well as potential job opportunities.

Mobility is important also on the side of the supervisory team. A supportive and challenging research environment is strengthened also by internationally trained supervisors. International training of supervisors will bring in the research group inputs from the wider academic community, it will promote the best practices in supervision of candidates and improve the overall quality of the programme, thus making available mobility opportunities for doctoral supervisors is equally important. Furthermore, the outcomes of the research projects shall be discussed in an international environment, with discussant coming from HEIS and research institutes from other countries.

On the basis of group members feed-back and data available, it is clear that Doctoral candidates’ mobility is very unbalanced, when one looks at the flux between East and West or North and South of Europe. To balance this trend, an additional effort is asked from the countries with outgoing flux of students to fully implement reforms and incentivize incoming mobility. One of the major tools to reduce brain-drain, to increase the international dimension of Doctoral training and the integration of a true EHEA third cycle training is the increase of joint Doctoral programmes. There are several good practices for the development of joint programmes, which can inspire institutions in providing more integrated programmes. The European initiatives for the development of joint programme, such as the European Union Programmes Erasmus Mundus and Marie Skoldowska Curie Actions or the Joinman Project[[35]](#footnote-36), set a number of recommendations on how to develop a quality based joint programmes which the group deem relevant also for the third cycle. In particular, the recommendations to be taken into account refer to:

* the identification of a clear added value in the collaboration between the two (or more) partners;
* the definition, in the institutional agreement between the partners, of the conduction of the programme and supervisory activities, of mobility period, of management, financial and administrative issues, of the assessment of candidates;
* the existence of a joint management and monitoring body to oversee the programme and of a joint quality assurance approach.

In countries where doctoral programmes are accredited at the national level, the European approach for the accreditation of joint Doctoral programmes should be followed[[36]](#footnote-37). The main drawback of setting up a joint programme, in the third as in previous cycle, is its sustainability once European and national support is ended. Together with providing the financial incentives to support excellence in Doctoral training, especially when they are transnational, countries and HEIs should commit in dismantling all barriers to these programmes.

The highest systematic impact is ensured by joint programmes, as the cooperation lays at the programme level (all students benefit of the cooperation) but other form of cooperation, more targeted to the single research project should be taken care of. Other, forms of cooperation are initiatives like “co-tutelle” of doctoral thesis. In this case the group recommends that co-tutelle is based on:

* an institutional agreement, setting the framework of cooperation between the two institutions and the commitments of both parties;
* a research plan subscribed by the three parties involved, the candidate, the supervisor of the host institution and the one of the home institution, specifying the responsibilities of the three parties, the duration of the mobility period and the expected outcomes of it[[37]](#footnote-38), the procedure for the joint co-tutelle of the final dissertation and its discussion;
* a clear timeframe.

Given the catalyst effect of the 20% target on first and second cycle mobility, the group discussed the possibility to propose a specific target for international mobility also in the third cycle.

The main difficulty faced, though, in formulating a concrete proposal has been the lack of updated and consistent data for a sufficient number of EHEA countries. Therefore, the group proposes a commitment by all EHEA in improving their data collection for mobility in Doctoral education. In this sense, the group proposes to consider short cycle mobility in Doctoral education to be monitored as “mobility periods during the Doctoral training in other HEIs, in a research institute or in an enterprise of another country for at least three months”. On the basis of more reliable data, the BFUG could propose a specific target for Doctoral graduates mobility. The definition for the degree mobility shall be based on prior qualification and/or on residency mobility.

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| **The WG recommends that:**   * **an increase in the mobility opportunities should be pursued, as qualitative element of the programme and as opportunity for further diversification and enrichment of the academic environment;** * **The Countries and the HEIs participating to the EHEA shall fully implement existing and future recommendations on mobility and on internationalization of programmes by adapting them to the research-based approach of Doctoral training. Special attention shall be paid by HEIs to international profile of supervisors and to international mobility opportunities for them;** * **HEIs shall be encouraged to develop programmes and other forms of collaboration with international partners, such as co-tutelle, where there is an added value for the research project. These shall be defined in institutional agreements that specify in advance how the collaboration will be organised;** * **Data collection on international mobility of doctoral candidates shall be improved, following definitions agreed at the European level, with the aim to gather robust information on mobility flows within and to/from the EHEA and to develop a mobility target for Doctoral candidates of the EHEA.** |

## The challenge of data collection

Assessing the implementation of the commitments taken by Ministers and by Higher Education Institutions on Doctoral education is challenged by the lack of quantitative data at the national and at the international level, especially if we consider the geographical extension of the European Higher Education Area. In some countries, Doctoral training is monitored at the national level, in others at the institutional level (without coordination between institutions), in others data are not collected at all. The lack of data refers to many elements: the number and the features (collaborative programs, international programs, interdisciplinary programs,…) of Doctoral programs, the number and the profile of the candidates and of the supervisors, the numbers and the profile of PhD holders and their career.

If policy work at the European level is to be continued, with meaningful commitments on quality, on employability, on internationalization and mobility, and on transparency, Ministries and HE institutions across all EHEA countries should make an effort to collect data on all the fields mentioned, following a methodology agreed at the European level. Ministries, with the support of statistical offices, should agree on definitions and on the adequate methods of data collection, taking into account the existing data, the institutional costs and possible procedures.

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| **The WG recommends that:**   * **EHEA countries shall improve the data available on Doctoral training, by starting from the Doctoral programmes offered, including collaborative programmes and joint programmes, from the number of candidates and their main characteristics, candidates’ international mobility, and from Doctorate holder’s employment.** |

## Financial sustainability of the reform in the third cycle

The Working Group on third cycle has committed to make appropriate proposals related to the third cycle, including those referring to sustainable funding, in accordance with the Ministerial commitments addressing doctoral education (Bucharest, 2012 – “sustain diversity of doctoral programmes while exploring “how to promote quality, transparency, employability and mobility in the third cycle”).

This chapter is based on an analysis of relevant documents, provisions and surveys on the subject, in the attempt of identifying good-practice examples and potential recommendations for the future.

Doctoral training is closely linked to research, as doctoral programmes go along with the research activity of the institution through various structures or activities (e.g. doctoral schools, research institutes etc.). However, not many countries have adopted an activity-based funding scheme, thus they are unable to distinguish the allocation and spending of the money on individual activities (e.g. differentiating between doctoral education and research). Therefore it was natural for the WG to firstly explore the funding schemes in place for research as part of the strategy to consolidate a knowledge-based society and, then, the options available for doctoral education. A sustainable funding for university-based research needs a coordinated contribution from regional, national and European level, as neither source would be efficient alone. However, EU funding should have clear European added value and not be used as a surrogate where EU member states are not able or willing to invest in research.

At European level most of the research funding opportunities for doctoral education are provided by the European Commission, through the Framework Programmes and the structural funds.

In order for research to fully benefit from the European funds and those allocated from the state budget, at national level, research funding should help universities to sustainably develop their research capacity and shape their research profile according to their mission. Research funding should also enable striving for excellence by ensuring a distribution of funds that encourages the meet of the quality standards and ethical requirements[[38]](#footnote-39). External support and consultancy could be offered along with the creation of the appropriate legal framework and safeguarding university autonomy in pursuing its goals for research and doctoral education[[39]](#footnote-40).

Moreover, universities should promote effective and efficient spending of their resources, as well as diversify additional sources of funding, while at the same time valuing their autonomy, gaining ownership over the process and setting their own agenda in accordance with their mission and research profile. To this aim, universities should develop their leadership and governance competencies, update their funding structures and strengthen their capacity of resource management. In pursuing fundraising strategies for doctoral education, independence of the academic community is essential, as well as ensuring that research meets both prescribed quality standards and ethical guidelines.

New sources of funding can be identified by strengthening the links with the region (e.g. social partners representing regional business and industry sector), while responding to its needs according to the universities’ mission. Universities could also address philanthropic funding, charity and foundations, though they usually cover only direct costs of the research they are supporting[[40]](#footnote-41).

Ministers of Education have committed in 2005, in Austria, to ensure “appropriate and sustainable funding” for “the development of quality doctoral programmes and the successful completion by doctoral candidates”. Funding should be stable and cover the full period of the doctoral programme, and providing sufficient means to live and work in decent conditions, as well as motivate suitable-qualified candidates from lower-income groups so that it represents a real incentive.

Doctoral programme funding is assured in a complex funding scheme predominantly through national grants (national funds - where responsibility is shared between government, research councils and other funding agencies) and the personal contribution of the PhD candidates (tax-paying forms of study), to which international funds (grants/scholarships), private funding (scholarships) and donations are contributing. These funding opportunities are linked to the doctoral candidates’ status, educational traditions and country regulations. And they translate into: grants, scholarships, fellowships and salaries for the doctoral candidates who do not self-finance themselves. Moreover, funding usually covers the tuition fee and partly the cost of living (rarely including the cover of the social security costs). In most cases, doctoral grants unfortunately cover only 3 years of study, while if the programme lasts for four years, the PhD students are forced to look for a (part-time) job exactly when they should be writing their final thesis, according to EUA. This underlines once more the importance of a permanent commitment of the stakeholders towards an increased public funding to ensure sustainability of the doctoral education, a coordinated process of data collection regarding the funding of doctoral training in order to obtain access to comparable data (statistics) and design of evidence-based public policies for this sector. Furthermore, European funding opportunities should primarily address projects or programmes with European added-value, so as not to be used as a reason to promote cuts in national budgets for research.

A potential solution to enhance funding for doctoral programmes is the creation of joint-programmes that involve setting an agreement with the partner, either on the common programme, or a collaborative funding scheme with private partners. They might collaborate, when the company is seeking for expertise and knowledge not available in the company, or under the form of partnership between the two entities which both provide specialists (the company is responsible with the scientific-technological development). Either way, these collaborative relations are also opportunities to raise employability of doctoral candidates or PhD holders, as well as to attract resources from industry for the universities based on research. The partnership can take the form of: collaborative doctoral programmes, joint short-term internships, short-term secondments for academics in companies or vice-versa, joint training programmes or joint research laboratories. Nevertheless, such partnerships should be carefully organized in order to maintain academic standards, ethical requirements and transparency standards of research, thus ensuring the researchers’ independence (especially when private-public partnership is concerned).

The analysis has highlighted some good-practice examples regarding funding doctoral education. UK has developed a full-costing system with a remarkable cooperation between universities, government and funders, as a response to the concerns regarding sustainable funding. Finland has covered through public funding indirect costs of the research activities by making them eligible for public financing.

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| **The WG recommends that:**   * **Sustainable funding for building the research capacity of universities should be ensured: the appropriate budget for research should be allocated primarily from public funds, through a single line for research, research policy and strategy, while assuring transparent systems of funds’ allocation.** * **For ensuring the quality of the doctoral programmes and candidate through appropriate funding, the WG recommends:**   + **to design and implement full-cost mechanisms with regard to funding research and doctoral programmes, thus ensuring the contribution to reaching the needed comparability for the existing statistics on the research funding and future development of evidence-based public policies in the area;**   + **address the opportunities coming from the private companies (industries) and charity foundations in order to diversify the potential sources of funding, but balance between strategic or targeted funding and independent funding (contributing to operational support);**   + **update and raise the capacity of financial structures in order to attract funds either from private or public sources;**   + **design and offer collaborative doctoral programmes with partnerships that imply sharing the costs;**   + **promote and inform potential PhD candidates about the opportunities they can choose from when considering to apply for a doctoral programme in terms of mechanisms to cover the cost of their education (scholarships, charity funds etc.);**   + **create and implement a legal framework that can guarantee the independence of institutions receiving the money and the preservation of academic principles in research activities, especially when a private partnership is concerned;**   + **funding for the third cycle should cover all the following elements: salaries of the supervisors, stipendium for the candidate, utilities for the university, research materials and research equipment*.*** |

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# Annexes

The term of reference of the ad hoc working group on the third cycle

**Purpose**  
Map the current implementation of the third cycle in the EHEA, in the light of the “Salzburg II recommendations” and the Principles for Innovative Doctoral Training;  
Formulate policy proposals to promote quality, transparency, employability and mobility in the third cycle, on the basis of the outcomes of the previous point and taking into account the developments foreseen within the ERA by Horizon 2020 and other EU initiatives.  
Formulate policy proposals to improve the transition between the second and the third cycle, with the aim to strengthen the link between education and research.   
  
**Specific Tasks**

1.    In cooperation with EUA and the European Commission, analyse the current state of doctoral studies in EHEA countries, taking account of the two reference documents – the Salzburg II Recommendations and the Principles for Innovative Doctoral Training.  
2.    Starting from the information provided by the existing National Qualifications Frameworks, map: i) the diverse kind of third cycle degrees offered by HEIs and possible pathways connecting them; ii) different types of doctoral programs in order to formulate  policy proposals to improve existing models and instruments.  
3.    Explore and make proposals for strengthening the link between the second cycle and third cycle in order to facilitate progression, the development of research competencies and timely recruitment to doctoral programs.  
4.    Explore and make proposals concerning quality and quality assurance procedures in Doctoral training, in cooperation with relevant stakeholders.  
5.    Formulate policy proposals to increase the use of existing transparency tools for third cycle degrees, based on existing good practices in the field, and explore new instruments to increase transparency of third cycle degrees.  
6.    Examine third cycle degrees with the view to identify, with a specific focus on Doctoral studies[[41]](#footnote-42), the barriers and incentives to international mobility and define policy proposals for improvement.  
7.    Analyse the results achieved by the different profiles of third cycle degrees offered, with a specific focus on Doctoral Degrees[[42]](#footnote-43), and define policy proposals to improve their employability.  
Make other policy proposals related to the third cycle, as appropriate, such as sustainable funding for third cycle education or candidate recruitment practices.

1. Throughout the text, the terms “Doctoral training” (instead of Doctoral education) will be used. The choice, made by consensus, does not imply that Doctoral training is not part of the three cycle system. The group acknowledges the fact that there are elements related to “education” in the programme, that candidates are asked, in some countries more than in others, to learn during the Doctoral programme and that they are considered also as “students”. On the other side, the terms “Doctoral training” reflects more clearly the distinctive feature of Doctoral education as research-based programme. Similarly, the term “learning outcomes” has been often substituted with “outcomes” or “skills and competencies” to be achieved by the student. The learning process is not the only activity carried by the candidate, therefore a more open terminology was needed. In addition, depending on the national and institutional context, the understanding is that not always outcomes can be pre-defined. Sometimes, it is more straightforward for transversal skills and competences and, more rarely, it is so with the outcomes of research. [↑](#footnote-ref-2)
2. For the purpose of this report, expected outcomes refers to the specific skills and competencies that a PhD candidate should develop during the doctoral training, ranging from research skills, specialist knowledge to transferrable competencies that will enable him/her to attend a career path upon wish as a qualified researcher in or outside the academic sector. [↑](#footnote-ref-3)
3. Principles agreed during the Bologna seminar on “Doctoral programmes for the European knowledge society”, held in Salzburg 3 – 5 February 2005. <http://www.eua.be/eua/jsp/en/upload/Salzburg_Report_final.1129817011146.pdf> [↑](#footnote-ref-4)
4. Extract from "Report of Mapping Exercise on Doctoral Training in Europe "Towards a common approach" of27 June 2011, adopted by the ERA Steering Group on Human Resources and Mobility

   <http://ec.europa.eu/euraxess/pdf/research_policies/Principles_for_Innovative_Doctoral_Training.pdf> [↑](#footnote-ref-5)
5. UNESCO, OECD and EUROSTAT statistics [↑](#footnote-ref-6)
6. EUA, TRENDS 2010, 2010 (http://www.eua.be/eua-work-and-policy-area/building-the-european-higher-education-area/trends-in-european-higher-education/trends-vi.aspx); [↑](#footnote-ref-7)
7. EUA, „Quality assurance in Doctoral Education – results of the ARDE project”, 2013 (<http://www.eua.be/arde>); [↑](#footnote-ref-8)
8. The topics “structured programmes” and structured training” will be discussed later in the document. [↑](#footnote-ref-9)
9. By the term external financial support, we refer to a wide diversity of entities like Regional/local Governments, national agencies to distribute public funding, European programmes or to private financial support. [↑](#footnote-ref-10)
10. Salzburg II Recommendations: European Universities' Achievements since 2005 in Implementing the Salzburg Principles, EUA, 2010. (<http://www.eua.be/cde/publications.aspx>). [↑](#footnote-ref-11)
11. These will be the definition of “structured doctoral training” and “structured doctoral programme” used in the present text. [↑](#footnote-ref-12)
12. “Collaborative Doctoral Education: University-Industry Partnerships for Enhancing Knowledge Exchange", EUA, 2009. [↑](#footnote-ref-13)
13. OECD (2013), “Key findings of the OECD-KNOWINNO project on the Careers of Doctorate holders,” 2013, by OECD [↑](#footnote-ref-14)
14. Evidences can be found in the EU funded project results. [↑](#footnote-ref-15)
15. The reference is to being employed in the company cooperating with the HEIs. [↑](#footnote-ref-16)
16. <http://www.ehea.info/Uploads/Declarations/Berlin_Communique1.pdf>; [↑](#footnote-ref-17)
17. <http://www.ehea.info/Uploads/Declarations/Leuven_Louvain-la-Neuve_Communiqu%C3%A9_April_2009.pdf>; [↑](#footnote-ref-18)
18. <http://www.ehea.info/Uploads/%281%29/Bucharest%20Communique%202012%281%29.pdf>; [↑](#footnote-ref-19)
19. Bologna Implementation Report [↑](#footnote-ref-20)
20. [↑](#footnote-ref-21)
21. [http://www.ehea.info/Uploads/about/050520\_Bergen\_Communique1.pdf](http://www.ehea.info/Uploads/Declarations/Berlin_Communique1.pdf) [↑](#footnote-ref-22)
22. EU member States. [↑](#footnote-ref-23)
23. The analysis of the answers outlined that while in Armenia, Croatia, Cyprus, Germany, Hungary, Ireland, Lithuania, Moldova, the Netherlands, Poland, Romania, Switzerland and the United Kingdom graduates do not receive a Diploma Supplement after completing their doctoral studies, in Austria, the Flemish and French communities of Belgium, Bosnia and Herzegovina, the Czech Republic, Estonia, Finland, Iceland, Liechtenstein, Portugal, Serbia, the Slovak Republic, Slovenia, Spain, Sweden and Turkey Diploma Supplements are awarded to all doctoral graduates. In Bulgaria the Diploma Supplement is available on request while in Denmark, Italy and Norway some higher education institutions award DS for doctoral graduates, even if it is not legally mandatory. Furthermore, in Austria, the Czech Republic, the Flemish and French communities of Belgium, Estonia and Turkey, the Diploma Supplement has the same format for bachelor, masters and doctoral studies. The Czech Republic underlined that the Diploma Supplement is provided in a bilingual form, free of charge guaranteed by the law. Moldova is planning on introducing a Diploma Supplement in 2014, in the same format as for the one awarded at the completion of the first two cycles. In Portugal recent legislation (Decree Law 115/2013) introduced DS for doctoral graduates, while in Spain a new model of DS is being established. [↑](#footnote-ref-24)
24. These proposals were already sent to the responsible for the revision of the ECTS Users’ Guide and thus it is expected that they are taken into consideration in the revision process. [↑](#footnote-ref-25)
25. With particular reference to EUA and EURODOC. [↑](#footnote-ref-26)
26. <http://www.ehea.info/Uploads/%281%29/Bucharest%20Communique%202012%281%29.pdf>; [↑](#footnote-ref-27)
27. The MORE2 Higher Education Survey asked doctoral candidates to what extent they had received structured training in the course of their doctoral education. As an average, just over half of PhD candidates and recent PhD holders in the EU-27 member states, associated countries and candidate countries (referred to as the EU-33) received structured training during their PhD (52 per cent).

    17Salzburg Recommendations (http://www.eua.be/Libraries/Publications\_homepage\_list/Salzburg\_II\_Recommendations.sflb.ashx), Principles for Innovative Doctoral training (http://ec.europa.eu/euraxess/pdf/research\_policies/Principles\_for\_Innovative\_Doctoral\_Training.pdf); [↑](#footnote-ref-28)
28. http://www.ehea.info/Uploads/Declarations/Bergen\_Communique1.pdf; [↑](#footnote-ref-29)
29. The MORE2 Higher Education Survey asked doctoral candidates to what extent they had received structured training in the course of their doctoral education. As an average, just over half of PhD candidates and recent PhD holders in the EU-27 member states, associated countries and candidate countries (referred to as the EU-33) received structured training during their PhD (52 per cent). [↑](#footnote-ref-30)
30. DOC-CAREERS Report, EUA, 2009. Chapter 4 on “Employability Perspectives, Mobility and Skill Requirements”, pp 71-92. [↑](#footnote-ref-31)
31. FUE (2012a) Fundación Universidad Empresa (FUE). Ministerio de Industria, Energía y Turismo (2012), “Educación emprendedora: buenas prácticas en la universidad española.” Catálogo general de Publicaciones oficiales: <http://www.060.es/>.

    FUE (2012b) Fundación Universidad Empresa. Ministerio de Industria, Energía y Turismo (2012), “Educación emprendedora: buenas prácticas internacionales.” Catálogo general de Publicaciones oficiales: <http://www.060.es/> [↑](#footnote-ref-32)
32. The reference is to the BFUG Working Group on mobility and internationalization. [↑](#footnote-ref-33)
33. Conclusion of the working group on mobility and internationalization presented at the Yerevan Ministerial Conference. [↑](#footnote-ref-34)
34. France (<http://www.campusfrance.org/en>), Finland (<http://www.studyinfinland.fi/>), Spain (<http://www.studyinspain.info/?l=en>), to quote very few examples. [↑](#footnote-ref-35)
35. https://www.joiman.eu/default.aspx [↑](#footnote-ref-36)
36. Rif. To the approach [↑](#footnote-ref-37)
37. In terms of specific skills and competencies to be developed / attained during the doctoral training with the help of the two supervisors, that could ensure future career opportunities, employability, self-entrepreneurship for the PhD holder; [↑](#footnote-ref-38)
38. <http://www.eua.be/Libraries/Doctoral_week_2012/Hannah_Akuffo_Debating_funding_models_for_international_doctoral_education_partnerships.sflb.ashx> [↑](#footnote-ref-39)
39. EUA, 2008 - “FINANCIALLY SUSTAINABLE UNIVERSITIES TOWARDS FULL COSTING IN EUROPEAN UNIVERSITIES “ (<http://www.eua.be/Libraries/Publications_homepage_list/Financially_Sustainable_Universities.sflb.ashx>) [↑](#footnote-ref-40)
40. EUA, , “Financially Sustainable Universities: Full Costing - Progress and Practice” <http://www.eua.be/Libraries/Publications_homepage_list/Full_Costing_Progress_and_Practice_web.sflb.ashx> [↑](#footnote-ref-41)
41. The term refers to standard PhD programs as well as Doctor of Science Degree, where applicable. [↑](#footnote-ref-42)
42. The term refers to standard PhD programs as well as Doctor of Science Degree, where applicable. [↑](#footnote-ref-43)