



HRK

“Form Follows Function – Comparing Doctoral Training in Europe and North America”

International Workshop organized by the
German Rectors' Conference (HRK) and UNESCO-CEPES
Frankfurt University, Frankfurt am Main, 9-10 November 2006

Research, Knowledge Economy and the Features of Doctoral Education

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Introduction

The international workshop Form Follows Function – Comparing Doctoral Training in Europe and North America convened experts from a variety of academic backgrounds, countries, research institutions and higher education agencies to discuss and deliberate on future challenges, functions and features for doctoral education in the face of rapidly changing demands from both the wider labor market and the academe or research. Due to the accelerating expansion of higher education and structural changes in the respective systems, research and professional education are subject to continuous remodelling, reform and recalibration on both sides of the Atlantic. The seminar's presentations and discussions covered a wide range of different topics, ranging from broad policy issues and agendas to very practical examples of best practices of doctoral training in a given field.

This report intends to capture issues and concerns that were discussed during the conference, based on a common ground with regard to major challenges, questions, goals and organizational forms of doctoral training at the beginning of the 21st century. From a birds eye view, passing over diverging details of individual cases and ironing out possibly controversial questions, it seeks to map out, delineate, and better understand the territory of doctoral education as well as detail some of the most important issues to be addressed. Wherever feasible, the topic under consideration concludes in a “proposition” that will indicate pending problems in need of further discussion, suggestions for change to be elaborated at a later stage, or an consensus emerging from among the participants about steps to be taken to make doctoral education fit for the needs of competitive, knowledge-based economies, post-industrial societies and top-notch research across fields.

Summary of main propositions

Proposition 3: There is no one-fits-all model that would guarantee doctoral education to be effective. As a matter of fact, diversity and heterogeneity of programs offered are steadily growing. Yet though there needs to be room for new formats and delivery forms, the main goal of PhD programs remains to empower and enable independent research capacities and contributions which their respective features and organization should help engender and support.

Proposition 6: To facilitate appreciation and better understanding of the features and format of a given doctoral program, PhD students should receive a "Diploma Supplement" that shortly describes and characterizes both the institution and program they graduated from.

Proposition 9: Universities are encouraged to establish, strengthen, and safeguard institutional responsibilities for PhD programs and candidates which may involve contracts between PhD students, their advisors and the institution that stipulate their respective rights and obligations, including supervision and guidance.

Proposition 12: Universities with large numbers of doctoral programs and students are encouraged to establish a graduate school under the leadership of a dean as an organizational unit independent of departments, programs, centers, professional schools and other offices. Its main function and purpose is to enhance graduate experience by providing funding and resources for graduate students, programs and adds-on, to track educational progress and attrition rates, review and retune doctoral programs and to provide guidance and fair process for all PhD students. The graduate school should have the power to appoint academic supervisors for PhD students and to define who may become a member. The evidence produced by performing these tasks will allow for informed judgments about what is wrong and what works well with doctoral programs and thus contribute to make doctoral education on the whole better, more effective and efficient.

Proposition 13: The Dean of the Graduate School is an officer of the university who is responsible for the good performance of its academic units and programs, but also serves as an advocate for graduate students and their concerns and for the institutional policy for doctoral training/graduate training. A highly recommended policy option is to merge the position of the Dean of Graduate School with that of the Vice President for Research, in order to strengthen the position and at the same time better tune doctoral training to a university's research policies and management as this might help provide for funding and with grant applications.

Proposition 18: Institutions offering doctoral programs are required to establish, maintain and demonstrate quality assurance measurements that address at least the following issues:

1. They need commit to enabling PhD students to complete their programs and graduate in due time, and be held accountable for their respective activities.
2. They need to track the progress of their PhD students across the fields and try to identify, and address, causes for high attrition rates.
3. They need balance and continuously re-adjust course work assignments and independent research components of doctoral programs to safeguard that they are well tuned to meet the needs of both students and research fields and yield high quality.
4. They need design and offer umbrella courses for all PhD students suited to add value to and improve the outcomes of doctoral education.

1. Setting the stage

Not just the opening debate, but many sessions mirrored a rising concern about current outlooks, outcomes and shortcomings of doctoral training in both Europe and North America. It is widely accepted that doctoral degrees often do not seem to provide all skills necessary for the potential work settings: Programs tend to lack clear aims or focus, leading to mismatches between their design and content on the one hand and competencies on the other hand which the majority of graduates who will no longer become academics or researchers, need at their workplace. In addition to the pending issue of (un-)employability, doctoral training sometimes also fails to provide students with the skills and qualifications necessary for success in academia as well as in corporate research. Finally, high attrition rates across all fields, institutions and countries signal the existence of severe organizational, governance and delivery problems of doctoral programs that call for closer attention, remedy and improvement.

While it is obvious that the demand for PhDs is driven by the research sector both within and without the academe, it goes without saying that in terms of numbers, profiles and skills sought this demand differs widely from field to field, with health and medical issues being at the forefront of heavily research-dependent areas. With regards to the question of how many PhD qualifications we might need to feed a dynamic knowledge economy or if other forms of higher qualifications would do, however, there is but little reliable data to come to an informed judgment. That is why the workshop felt well-advised to not further elaborate on this topic and on the linkage between labor market and doctoral education, but rather to focus on the supply side or "system software", as it were, and how this could be improved and remodelled. Consequently, the question if and to what extent PhD programs could, and should explicitly cope with the demand side of the labor market remained open and unsettled.

2. Purpose and structure of doctoral education

Within North American higher education, graduate education is probably the area best reviewed, evaluated, and monitored. Yet we know of no convincing pedagogy of research or any reliable yardsticks for performance assessment. So, doubts have not only been cast on overall goals and directions for doctoral education, but it also remains an open question how the aims of a given program can be best reached or what evidence exists for the added value it claims to generate. This holds true also for the US, where the great bulk of PhD graduates, unlike in Europe, across the board is still meant to become academics, that is to assume some kind of faculty position at a university or college, but not to exit the academe to find employment elsewhere in the first place.

Even though it obviously is difficult, if not impossible, to identify and stipulate goals and suitable technologies that make a PhD program successful, a common denominator surfaced during the discussions that stressed three important issues for the design and scaffolding of doctoral education:

Most importantly, PhD programs should be built around, and focused on research training and furthering of independent research capacities. A PhD is a research degree aiming to prepare and educate future researchers, scholars and academics, yet not in such way to clone a student's academic advisors and their work. Instead, PhD graduates should be able and encouraged to learn, to responsibly conduct independent research and create new knowledge in their respective field so that eventually they will become "stewards of their disciplines".

Secondly, doctoral education should not narrowly focus on a research topic or methodology. Rather, it should call for crossing disciplinary boundaries, stimulate interdisciplinary reasoning and approaches, and steer graduate students into openness and alertness. Since its primary objective is to create a habit of mind, good doctoral education needs to allow for, and provide intellectual achievement by way of breadth and incitement both in its taught components as well as in the actual stages of ongoing research.

Third, facing post-PhD reality and employment, all doctoral program training needs to foresee and provide useful transferable skills to allow their graduates to become successful “knowledge workers”. Salesmanship, skills in presentation, project management and team leadership and marketing science have become indispensable even for research in a strict sense, let alone research management. A mandatory core curriculum for all PhD students could greatly assist in the acquisition of communication and collaboration skills, project management and strategic thinking.

Proposition 1: Firstly, doctoral education aims at fostering an independent habit of mind through the furthering of independent research capacities that enable PhD students to create new knowledge and conduct research in the field of their choice.

Proposition 2: Beyond training for research, doctoral education needs to cater to the development and exercise of useful transferable social skills, looking for incremental improvements in the programs’ organizational structure and amendments with respect to topics and contents covered.

3. Profiles and structure of PhD programs

The increasing number and percentage share of PhDs employed outside the academe and research organizations as well as discernible pressures from professional bodies for an upgrading of degrees in their respective occupational fields have stirred attempts to diversify both the focus and organizational features of doctoral programs. Under heavy competitive pressure, many universities in the UK, for instance, began to introduce “professional doctorates” over the last decade to cater to a growing demand for higher degrees in areas such as sports, culture, and, above all, medical or health services. Not always, but very often those programs are offered part-time and explicitly refer to work-based competencies; sometimes, PhDs are even designed as taught rather than research based degrees. In addition, it has been suggested to further differentiate between research-oriented PhD programs and those that would qualify their graduates for workplaces in knowledge-intense corporations that require sophisticated levels of knowledge application and exploitation, but no research competencies as such.

Weighing the points for and against a demand-driven diversification of doctoral education, a large number of concerns were raised in the workshop. Finally, most discussants, though favorable toward new degree structures and outlooks, seemed not fully convinced that professional PhDs would be important new features effectively contributing to the improvement and strengthening of doctoral education in general. Rather, it should be a top-priority for universities to rethink, refocus and reorganize their “traditional” research driven PhD programs instead of rushing into offering customized doctoral degrees for demands or niches that may promise some cutting edge.

Proposition 3: There is no one-fits-all model that would guarantee doctoral education to be effective. As a matter of fact, diversity and heterogeneity of programs offered are steadily growing. Yet though there needs to be room for new formats and delivery forms, the main goal of PhD programs remains to empower and enable independent research capacities and contributions which their respective features and organization should help engender and support.

Proposition 4: Doctoral education is to facilitate an authentic research experience. Though degrees and templates for providing such an experience may differ, it remains vital for all kinds of doctoral programs.

Proposition 5: Clearly, doctoral education needs more structure, guidance, and transparency. This, however, should not lead to an over-regulation that would stifle the research experience and specific habit of mind it is to engender in the first place.

Proposition 6: To facilitate appreciation and better understanding of the features and format of a given doctoral program, PhD students should receive a “Diploma Supplement” that shortly describes and characterizes both the institution and program they graduated from.

Proposition 7: As for the delivery and organization of doctoral programs, diversity and experiments are strongly encouraged. This may also include providing fast tracks or honorary classes for outstanding candidates in institutions with a large number of PhD students.

4. Relationship between Master and PhD Programs

With regards to the question if and to what an extent a Master program and degree should be a mandatory first phase of doctoral education – as it is the case in many European countries and most of Canada – or if students should be directly admitted to doctoral programs after having earned their first degree as it is the case in the US, many different views and practices can be found. Master programs in the US are more professionally oriented and mostly meant to be terminal. As a general observation, the degree to which the two strands of graduate education overlap or connect depends on widely different national traditions and legal frameworks and, of course, institutional profiles. Switching from three-cycle systems to direct admission of doctoral students without a Master’s degree may help a university strengthen its international competitiveness and attract top-tier students eager to embark on a doctoral program immediately after graduation from College. However, his approach implies more risks for the selection process and cuts off a broader supply base for doctoral programs from more mature, experienced, and accomplished students.

Proposition 8: Master and Doctoral Studies may assume many different templates to suit the academic profile of the degree awarding institution and the main objectives of the graduate programs it offers. If a Master degree is taken as prerequisite for entering a doctoral program, excellent students should be offered an easy transfer or cross-over option even before having completed their coursework or master theses.

5. Degree awarding power

In higher education, it is frequently discussed if all formally approved or accredited institutions should be allowed to award PhD degrees and, if not, how we could tell those that qualify from those that do not. As any answers we can think of tend to reflect and carry explicit institutional interests and hidden political preferences, the issue is thorny and the stakes are high. Thus it could not be expected that this workshop would reach an agreement, let alone consensus as to how best tackle this issue. However, participants unanimously stressed that the quality of a doctoral program should matter most and that no institution should be precluded from offering doctoral programs simply because it does not meet certain formal stipulations or requirements. In a similar vein, pragmatic case-by-case collaboration between different types of higher education institutions and cooperation with non-university research institutions to help launch and deliver doctoral programs that they could not have offered on their own should be welcomed and supported.

6. Supervision and guidance

Across different countries and institutions, institutional and personal responsibilities for the design and operation of doctoral programs have become a vexing problem, as has the question of who is in charge; this question tended to be answered with “no one.” The venerable apprenticeship model of doctoral training left little room for institutional responsibilities beyond the role of the master, but framed earning

a doctorate as a more or less personal relationship between student and advisor. This has changed more recently, yet de-personalized institutional guidance has added just another layer and not completely replaced that non-descript personal relation which still forms a central element of doctoral education. So, the question of who should be eligible to become a PhD advisor remains very important, and among PhD awarding universities, quite a few different practices can be found. Whereas most research universities seem to grant this right to their entire (tenured) faculty by default, some insist on formal appointments of PhD supervisors for a limited period of time. As an attempt to improve the commitment for doctoral training and its quality, a number of universities has established contractual relations between doctoral students, their advisors and their department that spell out their respective rights, obligations, and responsibilities.

Proposition 9: Universities are encouraged to establish, strengthen, and safeguard institutional responsibilities for PhD programs and candidates which may involve contracts between PhD students, their advisors and the institution that stipulate their respective rights and obligations, including supervision and guidance.

Proposition 10: Supervisors for doctoral students need to be actively engaged in research themselves and formally be appointed to that position either by ad-hoc decisions or a formal approval process run by the Graduate School. Supervisors should serve one term, with their performance periodically reviewed and assessed.

Proposition 11: Universities should strive to foster a vibrant doctoral culture across all fields to engage the intellectual curiosity, inter-disciplinary exchange and networking of PhD students through umbrella-courses, special lectures and cultural venues.

7. Graduate Schools

The workshop discussed at great length if a university would need, and should establish, a graduate school as an organizational unit independent from departments, programs, and professional schools. The question if this would be a prerequisite for running a successful and effective doctoral education was raised, and if so, should its role and responsibilities stretch beyond administrative duties and brackets (such as admission, funding and quality assurance) to include offering thematically driven umbrella courses on its own right? Obviously, any reasonable answer first has to take the size and number of graduate programs at a university into account, since it would not make much sense to set up a graduate school without a critical mass of both doctoral programs and students that many universities might not have at their disposal. In the course of the discussion the participants eventually felt confident that at universities with large numbers of doctoral programs and students a "powerful" graduate school may play an important role for the enhancement of doctoral education and that the risk of potential administrative friction loss would weigh far less than the added value.

Proposition 12: Universities with large numbers of doctoral programs and students are encouraged to establish a graduate school under the leadership of a dean as an organizational unit independent of departments, programs, centers, professional schools and other offices. Its main function and purpose is to enhance graduate experience by providing funding and resources for graduate students, programs and adds-on, to track educational progress and attrition rates, review and retune doctoral programs and to provide guidance and fair process for all PhD students. The graduate school should have the power to appoint academic supervisors for PhD students and to define who may become a member. The evidence produced by performing these tasks will allow for informed judgments about what is wrong and what works well with doctoral programs and thus contribute to make doctoral education on the whole better, more effective and efficient.

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8. Regulatory framework

More than in any other area of public higher education, we have witnessed on-going battles between states and universities about the governance and responsibilities for doctoral education. As universities claim doctoral studies to be an original part of academic affairs they are autonomous in pursuing, they have up to now successfully fought back attempts to give external stakeholders or state authorities a greater say in their regulation. Instead, they insist on their prerogative to decide upon design and operation of doctoral programs on purely academic grounds. Thus, unlike in the case of Bachelor and Master, any reform of the third cycle of university training in the European Higher Education Area (EHEA) has to deal with the challenge of very limited regulatory powers on the side of external agencies. On the other hand, universities in the USA have demonstrated their determination and capability to monitor and voluntarily reform doctoral programs by means of peer reviews, competition for talented applicants and junior faculty, benchmarking and comparative reviews hosted by agencies such as the Carnegie Foundation for the Advancement of Teaching.

Proposition 14: Rather than relying on the enforcement of binding regulatory frameworks to reform doctoral education, carving out and implementing a "European PhD", states and higher education agencies should seek to empower and entice universities to better monitor and incrementally improve their doctoral programs under their own responsibility by encouraging competition, making the survey and publication of key performance data mandatory, and supporting cooperative benchmarking of programmatic features, contents, and outcomes.

9. Inter-institutional collaboration

Different models for inter-institutional cooperation in doctoral training presented at the workshop shed a bright light on the tremendous importance collaborative ventures have gained in most competitive and advanced fields of research. There is no reason to assume that the need to cross institutional borders in order to strengthen research capacities and to improve outcomes will decrease in the near future. That is why it would be highly contraindicated for regulatory and funding agencies, for the sake of institutional interests, to insist on keeping balance sheets clean and doctoral training to happen intra muros of one institution only.

Proposition 15: Universities and public research institutions need to be encouraged and helped to intensify doctoral training under shared responsibilities of different institutions whose types may vary widely. This could also be a good way to explore different academic cultures that provides added value to doctoral education. In a similar vein, joint PhD degrees awarded by two or more institutions should be boosted and legal obstacles overcome.

10. Admission

Admission policies and practices for doctoral students vary widely between different countries and institutions: Some are strictly competitive and highly selective, others that just require a completed Master degree and good scores are much softer, and while the former tend to ask applicants to take standardized tests like the GRE and be interviewed, for the latter it may suffice to hand in transcripts. In most cases, however, it is the department or doctoral program that has the final say in selecting and admitting candidates while the Graduate School or some other organizational unit may handle the application procedures and define the terms for admissions, funding, or minimal requirements to be met. Hence it would go completely against the grain if the admission of doctoral students would be regarded, and handled, as an administrative act that could be centralized without active participation of faculty and the respective academic unit.

Proposition 16: A right fit between admission requirements on the one hand and the academic strengths of faculty and the goals of a doctoral program on the other is an important feature to bring about and sustain quality and success in doctoral training. Thus admission procedures need be carefully crafted to meet the institutional profile and educational policies of a university even if this results in a great variety of formats and practices.

Proposition 17: Unless regulative frameworks call for making it mandatory, it should lie in the discretionary power of a university to ask PhD applicants for a completed Master degree or not.

11. Quality assurance

Due to the lingering apprenticeship model as Leitmotiv and its close ties to the pursuit of research commonly understood to be erratic and unpredictable, quality assurance and, more precisely, quality management until very recently have played but a minor role in doctoral education and institutional practices. Yet with the number of PhD students soaring and the awareness for some kind of institutional responsibility growing, this is about to change. While quality management and assurance for doctoral programs clearly fall under a university's rights and duties, for self-regulation, governing bodies or regulative agencies could, and should, insist that they establish, and run, serious quality assuring procedures that cope with a number of well-definable issues.

Proposition 18: Institutions offering doctoral programs are required to establish, maintain and demonstrate quality assurance measurements that address at least the following issues:

- They need commit to enabling PhD students to complete their programs and graduate in due time, and be held accountable for their respective activities.
- They need to track the progress of their PhD students across the fields and try to identify, and address, causes for high attrition rates.
- They need balance and continuously re-adjust course work assignments and independent research components of doctoral programs to safeguard that they are well tuned to meet the needs of both students and research fields and yield high quality.
- They need design and offer umbrella courses for all PhD students suited to add value to and improve the outcomes of doctoral education.

12. Intellectual Property Rights

In recent years, the question intellectual property resulting from research and who is entitled to patent findings and receive royalties have become highly important for quite a few research areas and are controversially discussed in general. Legal stipulations and institutional practices vary, ranging from

shared ownership devices with clearly defined shares for all parties involved to more opaque case-by-case approaches, and as litigation and jurisdiction move on quickly, frequent readjustments and amendments occur.

Proposition 19: At least in those fields, in which intellectual property rights have become a major issue and topic of concern, doctoral programs have to address both ethic and legal issues of intellectual property and make their students familiar with legal frameworks, patent policies and institutional policies at place.

13. Internationalization

As for higher education in general, internationalization has gained importance for doctoral training as well, though at varying degrees in different fields and across institutions, with some narrowly focused on national problems and labor markets and others stressing international or even global outlooks. While international and joint degree programs in which institutions from different countries collaborate are not suitable for doctoral programs across the fields and all regions of Europe, universities have to provide all their PhD students with an opportunity to develop intercultural competencies that become ever more important by gathering international experience and exposing them to different academic and research cultures.


Proposition 20: Crossing national borders and diversifying outlooks must be an important goal and concern for doctoral education. International summer schools for doctoral students and regular participation at international conferences have proven highly effective incubators exposing students to different scientific approaches, mind sets and reasoning in their research fields and to stir international collaboration at low cost.

14. Post-Doctoral stage

Starting with the sciences, it has become common in many academic fields and disciplines to not consider PhD graduates eligible for faculty hiring or employment as senior researchers unless they have spent some time working as Post-Docs at different institutions. These Post-Doc contracts often go alongside undefined rights and duties, low pay and few benefits, sometimes even none at all. Regardless of misgivings and reservations, their number continues to increase and they are now taken for granted almost everywhere. As a matter of fact, they have become so “normal” in a literary sense that one has every reason to regard them as an additional fourth cycle in the EHEA or as an obligatory stage in the European and in the North American Research Area that officially is still undeclared and unacknowledged.

How to make sense and judge this phenomenon remained highly controversial, with different irreconcilable views on the matter running through many of the workshop’s sessions. While some participants warned against a depreciation of PhD degrees and exploitative labor contracts for young researchers, others commended Post-Doc employment as a great opportunity for young researchers to delve into their work, exercise one’s skills and curiosity without having to face other major obligations and responsibilities. In the end, the workshop reached no common ground except for wide agreement that Post-Doc employment needs to be a matter of concern that deserves closer attention.

This workshop was co-sponsored by

Gemeinnützige
Hertie-Stiftung 

(Hertie Foundation)