Elena MARTINS[1], Birgit SZCZYRBA, Petra LIEDTKE & Klaus BECKER (Cologne)

Rethinking the doctorate – universities of applied sciences offer new perspectives

Abstract

The reform of doctoral education in Europe has had a particular impact on the universities of applied sciences (UAS) in Germany. In line with intensified research activities, the number of graduates pursuing a doctoral project at a UAS has increased. In order to offer excellent doctoral education and ensure high quality supervision and training, UAS have started to implement innovative support measures for their doctoral candidates. Since the promotion of female researchers is a top priority of TH Köln, the institution designed a coaching program for female doctoral candidates within this context.

Keywords

Doctorate at university of applied sciences, coaching for doctoral candidates, peer coaching, female researchers

[1] email: elena.martins@web.de

1 General developments in doctoral education in Germany

The past years have seen numerous initiatives to restructure and revise doctoral education in the European Research Area and beyond. In Germany, this call for reforms was emphasized in strategy papers issued by the German Science Council (WR) and the German Rector's Conference (HRK), among various others.[2] This, in turn, has brought about challenges – but also opportunities – for German universities of applied sciences (UAS). UAS have responded to this paradigm shift by implementing measures that support excellent doctoral education. For instance, TH Köln founded a graduate center that offers different services, such as a coaching program for female doctoral candidates.

The German higher education system differentiates between the classical universities and the UAS that were founded in the 1970s. Traditionally, the UAS have offered practice-oriented academic education, while classical universities focus on academic education and basic research. In the past years, UAS have started to engage more actively in research and it has become a priority alongside the high standard of academic teaching. Consequently, research experience and ongoing research activity is now an essential criterion in the recruitment of UAS professors.

A significant difference between these two types of universities is that UAS do not possess the right to confer doctoral degrees. Recently, this has started to change, with some German states, as for example Hessen, leaning towards the empowerment of UAS concerning doctoral education.[3]

The provisions of the Bologna accords (1999-2009) were accepted in all German states and all masters' degrees independent of the various university types in Ger-

[2] C.f. WR 2002, 2010, 2011, 2013; HRK 2012

[3] http://www.spiegel.de/lebenundlernen/uni/fulda-erste-fachhochschule-darf-doktortitel-verleihen-a-1115948.html, retrieved October 13, 2016

many were defined as formally equal in the Higher Education Acts. This novelty determined that graduates from UAS with a master's degree were in principle granted access to doctoral education and should have no structural disadvantages through excessive or disproportionate requirements for the acceptance at the university. The processes of determining the eligibility that were common practice for graduates with UAS-diplomas in the mid-1990s were to be abolished. All these reforms have led to an increase of doctoral projects by UAS-graduates at classical universities and also of cooperative doctoral projects implemented between universities and UAS.

2 Doctoral education and UAS(-graduates)

2.1 Pursuing a doctorate as a UAS-graduate

UAS-graduates officially obtain the admission requirement for a doctorate with their master's degree, but the details of the access to a doctoral education are independently regulated by the faculties and departments. Some of these approximately 650 different regulations[4] have not been updated in accordance with the new legislation. In many cases, this continues to create obstacles that limit access to doctoral education for UAS-graduates. UAS therefore struggle to offer perspectives to their students and graduates at their own institution.[5] Moreover, it is in the interest of the UAS to steer a greater number of their own graduates to successfully obtain a doctoral degree, so they can be recruited as candidates for a professorship.[6] The cooperative doctorates facilitate the access to a doctoral education for UAS-graduates.

[4] Status October 2016, according to the HRK.

[5] This is especially true for disciplines that are not or only marginally covered by universities like Conservation or Social Work.

[6] Requirements for a career as a professor include a doctoral degree, scientific excellence, high-impact publications, teaching experience, a good professional network and visibility

2.2 Cooperative doctorates at UAS

UAS have attested their capacity to conduct highly innovative research. They are emancipating from their old role of polytechnic schools to a new type of university that drives innovation and knowledge transfer into the private and public sector, and provides research-based solutions to the challenges of our time. Post-graduate qualification at UAS therefore has become increasingly relevant. This is reflected in the significant increase in cooperative doctoral projects at UAS.

In the past years, UAS were able to recruit graduates for cooperative doctoral projects with outstanding performances in their fields before their recruitment – from both UAS and classical universities alike. In addition, the joint supervision with colleagues from classical universities has proven to be an added value, advancing joint research as well as academic and interdisciplinary cooperation.

Cooperative doctorates have become common practice in Germany and have been advocated by important institutions such as the WR (WR 2011, p. 4). They are usually based on a joint research question and are supervised pari passu by two professors – one at the UAS[7] and one at the partner university –, with the researcher at the UAS often having closer contact to the doctoral candidate as an on-campus member of their research group.

As a rule, the doctoral candidate is enrolled in both institutions and both supervisors are part of the doctoral committee. The doctoral candidate goes through the official application process at the university, which will confer the doctoral title. Currently, the acceptance of a doctoral candidate from a UAS is often based on an individual decision of the faculty at the university, which might entail certain obli-

in the scientific community as well as leadership skills and experience with budgetary responsibility. In addition, for a professorship at a UAS professional experience outside the university is demanded.

[7] Former university regulations did not allow professors from UAS to officially become members of the doctoral committees and the process of change is not yet completed.

gations for the candidates (e.g. to take further exams and/or enroll in further master level seminars etc.).

While Hessen has set a significant precedent by granting the right to confer doctorates to a UAS, the new Higher Education Act of North-Rhine-Westphalia (2014), for example, calls for the implementation of a state-wide graduate institute to strengthen cooperative doctorates as well as joint research between the participating UAS and universities. Consequently, in June 2016 the Graduierteninstitut NRW was founded, which consists of interdisciplinary groups of senior researchers of UAS and universities, who jointly supervise doctoral research.

3 Doctoral education at TH Köln

TH Köln, the largest UAS in Germany, offers young researchers a doctoral education that complies with the highest quality standards as well as specific support in their career development. The number of doctoral candidates researching at TH Köln has tripled since 2012. Currently, over 135 doctoral candidates are carrying out the research for their cooperative doctorates at TH Köln – with partner universities in Germany, Europe, and beyond. Most of these doctoral candidates are either employed as research staff or have received a scholarship and carry out their research on campus (see Fig. 1).

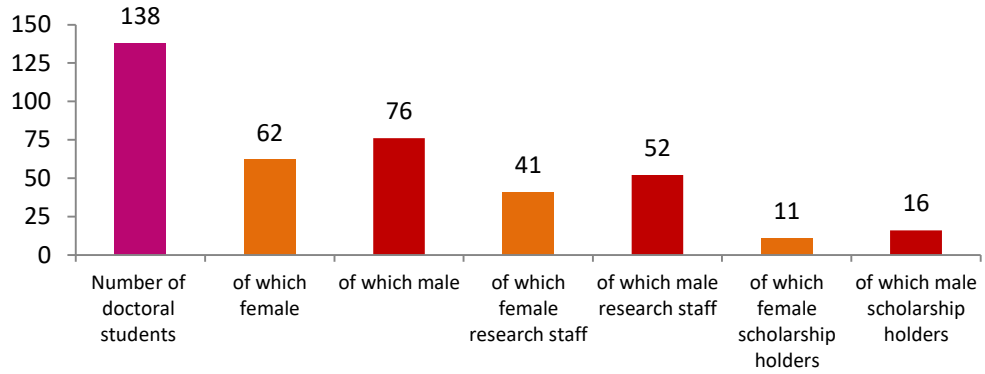

Fig. 1: Cooperative doctoral projects at TH Köln as of October 2016

In response to the increased number of doctoral candidates TH Köln founded a graduate center in 2016 that offers various services such as a training program beyond the disciplinary context, networking events, special support for international doctoral candidates, travel grants, and a coaching program.

4 Promotion of female researchers

The doctoral phase constitutes the first step into a professional career[8] and, as such, it is of vital importance for future development and employment. While the doctoral degree is a central requirement for a career as a researcher or as a university professor, most doctorate holders leave the university (50% directly after receiving their doctoral degree and another third in the course of the next five years) – this is especially true for women (c.f. BURKHARDT 2013).

Both at classical universities and UAS there are still far fewer female than male professors and the number of qualified female candidates for vacant professorships

[8] C.f. Salzburg Principles. EUA-CDE 2005, reaffirmed 2016

is often significantly lower than that of their male peers (HRK 2012, p. 8). With every level of qualification the proportion of women decreases and "the participation of women in the scientific system and in leadership positions does not correspond to the proportion of well-qualified women".[9] This phenomenon is often dubbed the "leaky pipeline" and is clearly visible in academia at the level of professorships. Explanations for this under-representation go beyond individual psychological or biographical reasons and oftentimes stem from the conditions of academia itself and/or the overall social context. These are structural disadvantages that are linked, among other issues, to selection processes characterized by gender stereotypes and gender-related biases.

The German government promotes the participation of women at all levels of the scientific community by supporting concrete measures that address gender equality through its nationwide "Female Professors' Program", in which TH Köln participates. It is a long-term goal of TH Köln to attract highly qualified female scientists to professorship positions. Hence, as of September 2016 TH Köln offers a doctoral coaching program specifically designed for its female doctoral candidates, given that this target group can still make early and conscious career choices and prepare for top positions in academia or the industry.

5 (Peer) Coaching for female doctoral candidates

Doctoral candidates work on complex research projects with a high degree of responsibility and high risks concerning their research findings. At the same time, they need to develop academic and professional competences. Therefore, focus on the target, perseverance, a well-planned approach, and a motivating environment are of utmost importance during the course of a doctoral project. Just as relevant is

[9] https://www.bmbf.de/foerderungen/bekanntmachung-797.html, retrieved October 19, 2016.

the balance between the different tasks of the doctoral phase (CARELL, REIS & SZCZYRBA, 2011, pp. 180).[10] Doctoral candidates have to:

a. perform within the academic discipline and their subject area;
b. commit to the methodologies and frameworks of the discipline;
c. find their role while transiting a qualification phase with an open result and balancing a myriad of responsibilities that are not part of their doctoral project such as other priority projects, teaching activities, administrative tasks, etc. (BYRNE, 2011, p. 55);
d. show physical and psychological resilience against poor work-life balance.

Typically, support for doctoral candidates has focused on scientific content-related issues (a), and methodology (b). The areas of work relationships (c) as well as the balance between succeeding with a doctoral project and private life (d) generally remain disregarded. By linking all four levels the conditions of doctoral projects can be improved and successful completion promoted, while also considering the importance of the reconciliation of employment, family, doctoral project and the relationship with the supervisor (c.f. WILDT & SZCZYRBA 2006, p. 61).

The conferral of a doctoral degree has two dimensions: the conduction of research and the professional development of the researcher. The research project has to be in line with the traditional methodology and research conduct of the specific field, while at the same time make a new and independent contribution to the respective discipline. To give doctoral candidates a chance to establish themselves as new and valuable members of the scientific community it is important that the paradox of adaption vs. autonomy is experienced as an emancipatory process within the limits of the research conventions. The now outdated German word for supervisor, "Doktormutter/-vater" (doctoral mother/father), describes the tension between the doctoral candidates' wish to fulfill the expectations of a scientific mentor and, at the same time, to become an independent researcher (c.f. SZCZYRBA 2005). In the framework of a cooperative doctorate this problem can be either resolved (by

[10] C.f. http://profil2.web.th-koeln.de/beratend-ineinandergreifen/dreieck

weakening the direct dependency) or redoubled by the co-supervision of two autonomous senior researchers from different university types. In this case, the doctoral candidates need to assert their independence from two mentors, whose expectations and guidance may differ – even if the supervisory process is monitored by the institution.

The coaching program at TH Köln offers support for female doctoral candidates to meet these challenges as well as an opportunity to work on their professional career development. Since about 30% of the doctoral candidates researching at TH Köln are international, it is offered in both German and English. The main objective of the coaching program is to encourage young female researchers to develop their personal set of skills as well as strengthen their relevant academic and professional networks. However, it also focuses on the paradoxical relation between adaption vs. autonomy and aims at supporting doctoral candidates in their process of emancipation. Bearing in mind the low numbers of women in top positions, the coaching puts particular emphasis on motivating the participants to consider their career options in- or outside academia and the skills they need to acquire during the doctoral phase in order to best prepare for their career goals.

The three yearly *peer coaching workshops* help generate individual and joint solutions for the different phases of the doctoral project. The 8-10 participants of these workshops define the coming challenges, reflect on the individual research processes, work on distinct problem-solving strategies, and plan concrete steps for the individual management of their doctoral project.

At the beginning of the coaching, the doctoral candidates set individual learning goals and monitor their progress in a *portfolio* that is regularly submitted to the coaches for feedback.

For the *yearly networking day* the supervisors, external researchers from other institutions and keynote speakers are invited. The event consists of interdisciplinary presentations and discussions on cross-cutting subjects of current social and academic interest linked to the doctoral projects of the participants. The doctoral candidates recapitulate the steps taken in the previous year and form operative and

strategic networks with other participants as well as supervisors active within the program. While the young researchers receive feedback on their achievements and how they should position themselves for the challenges to come, the coaches can determine their main focus for the following year.

Currently, new measures are being developed to improve doctoral education at TH Köln with the help of preliminary data from the coaching program, especially concerning the professionalization of supervision. Subsequently, these data and their application in new activities will be the subject of further publications.

6 Conclusion

UAS have the chance to show how reconsidered doctoral education can empower young researchers with high potential that did not have access to the third cycle before. Having no prior structures or traditions that would have to be changed or reworked and considering the currently still relatively small target group, UAS can set up novel high-quality structures, while benefitting from the experiences classical universities have gained in the past decades. These new structures can be tailored to the current needs of doctoral candidates and grow progressively. In turn, this provides a new solid base of junior research staff at the UAS that is essential for research and teaching activities.

It is crucial that doctoral education relies on a premeditated structure in order to ensure high quality standards. Universities of all types should ensure that these structures are not subject to random "evolution" and that they are sustainable. Different approaches and models for cooperative doctorates such as joint efforts like the Graduierteninstut NRW or individual solutions should hence be further explored.

Coaching programs for doctoral candidates as the one described here should be used to professionalize supervision in the doctoral phase and help supervisors to manage the requirements: providing guidance while encouraging the doctoral candidates to (1) acquire specific methodological skills, (2) develop an identity as a

member of the scientific community, (3) find a work-life balance, and (4) prepare for a career inside or outside academia.

Each individual deals differently with pressure depending on their respective disposition. But in many cases a doctoral coaching program offers useful and effective support in the process of pursuing a doctoral degree. It is essential for doctoral candidates to emancipate from their supervisors as researchers of the new generation. This holds true for both male and female doctoral candidates, which is why TH Köln plans to offer its current coaching program to all its doctoral candidates in the near future.

7 References

Burkhardt, A. et al. (2013). *Bundesbericht Wissenschaftlicher Nachwuchs 2013.* Bielefeld: Bertelsmann.

Byrne, G. (2011). German doctoral studies in engineering – an international perspective. In H. Hippler (Ed.), *Ingenieurpromotion. Stärken und Qualitätssicherung* (pp. 53–59). Berlin, Heidelberg: Springer.

Carell, A., Reis, O., & Szczyrba, B. (2011). Promovieren zwischen Anpassung und Eigenständigkeit: Promotionscoaching als Begleitung eines komplexen Leistungsprozesses. In J. Wergen (Ed.), *Forschung und Förderung. Promovierende im Blick der Hochschulen* (pp.179–197). Berlin: LIT.

European Commission (2011). *Principles for Innovative Doctoral Training*. Retrieved October 20, 2016 from http://ec.europa.eu/euraxess/pdf/research_policies/Principles_for_Innovative_Doctoral_Training.pdf

HRK (2012). *Empfehlung zur Qualitätssicherung in Promotionsverfahren*. Retrieved October 20, 2016 from http://www.hrk.de/uploads/tx_szconvention/Empfehlung_Qualitaetssicherung_Promotion_23042012.pdf

Szczyrba, B. (2005). Forschungssupervision und Promotionscoaching – Beratungsformate für die Promotionsphase und ihre Aufgabengebiete. In C. Koepernik, J. Moes, & S.Tiefel (Eds.), *Handbuch Promovieren mit Perspektive. Ein Ratgeber von und für DoktorandInnen* (pp. 277–285). Bielefeld: wbv.

Wildt, J., & Szczyrba, B. (2006). Strukturiert promovieren: Didaktische Konzeptionen und Modelle einer strukturierten Doktoranden-Ausbildung. In W. Fiedler, & E. Hebecker (Eds.), *Promovieren in Europa. Strukturen, Status und Perspektiven im Bologna-Prozess* (pp. 51–72). Opladen: Barbara Budrich.

WR (2013). *Perspektiven des deutschen Wissenschaftssystems*. Retrieved October 20, 2016 from http://www.wissenschaftsrat.de/download/archiv/3228-13.pdf

WR (2011). *Anforderungen an die Qualitätssicherung der Promotion*, Positionspapier. Retrieved October 20, 2016 from http://www.wissenschaftsrat.de/dowload/archiv/1704-11.pdf

WR (2010). *Empfehlungen zur Rolle der Fachhochschulen im Hochschulsystem*. Retrieved October 20, 2016 from http://www.wissenschaftsrat.de/download/archiv/10031-10.pdf

WR (2002). *Empfehlungen zur Doktorandenausbildung*. Retrieved October 20, 2016 from http://www.wissenschaftsrat.de/download/archiv/5459-02.pdf

Authors

Elena MARTINS || until March 2017: TH Köln – University of Applied Sciences, Graduate Center || Gustav-Heinemann-Ufer 54, D-50968 Köln

www.th-koeln.de

elena.martins@web.de

Dr. Birgit SZCZYRBA || TH Köln – University of Applied Sciences, Competence Team Academic Development || Gustav-Heinemann-Ufer 54, D-50968 Köln

www.th-koeln.de

birgit.szczyrba@th-koeln.de

Petra LIEDTKE || TH Köln – University of Applied Sciences, Equal Opportunities Office || Gustav-Heinemann-Ufer 54, D-50968 Köln

www.th-koeln.de

petra.liedtke@th-koeln.de

Prof. Dr.-Ing. Klaus BECKER || TH Köln – University of Applied Sciences, Vice President for Research and Knowledge Transfer || Gustav-Heinemann-Ufer 54, D-50968 Köln

www.th-koeln.de

klaus.becker@th-koeln.de