



Guidelines for the good supervision of doctoral researchers

Graduate Center

Technology
Arts Sciences
TH Köln

These “guidelines for the good supervision of doctoral researchers” have been discussed by the Commission for Promotion of Young Researchers. The Executive Board of TH Köln agreed to the content of these guidelines at its meeting on March 22, 2017.

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I Introduction

II Features of good supervision

The supervision of a doctoral procedure extends over four phases, the corresponding supervision activities for which are shown in detail in this chapter.

Excursus: The cooperative doctorate

The special features of a cooperative doctorate and its effects on the supervision situation are listed along with a reference to possibilities for providing support when establishing cooperation.

1 Preparation phase

Before a doctorate is started, the prospective doctoral candidate is advised and the framework conditions shown here are clarified.

1.1 Initial consultation

The supervision task begins with the initial meeting, which is also used to assess the potential doctoral candidate. The most important points to remember are summarized in this chapter.

1.2 Financing plan

The supervisor should talk to the candidate at an early stage about financing options for the doctorate. Important information is provided in this chapter.

2 Initial phase – establishing a supervision relationship

The actual doctoral procedure begins with the formal initiation of the cooperative doctorate and consultation with the cooperating university and the supervisor at this university. This initial phase also focuses on concluding a supervision agreement between the supervisor and the doctoral candidate. This chapter provides detailed information concerning the points that should be set down in writing in the of supervision agreement.

2.1 Time and work plan

The time and work plan, in which the course of the doctorate including the milestones to be achieved is set down, is an important part of the supervision agreement.

2.2 Regulations on working conditions

The doctoral candidate must be told about the regulations that apply at the university, a workplace must be provided, and all other necessary agreements made. The most important points are listed here.

2.3 Nature and scope of the supervision relationship

The frequency and structure of the supervision meetings between the supervisor and the doctoral candidate should be agreed at the beginning. This point covers the most im-

portant content of meetings, a time frame is suggested and reference is made to additional supervision possibilities for the doctoral candidate in the research group.

2.4 Research environment and networking

This point describes how the supervisor can introduce his/her doctoral candidate into the scientific community and provide support when the candidate establishes their own professional network. Besides opportunities to present and publish the research results as part of the doctorate, reference is also made to the opportunity to undertake an international and intersectoral exchange. An overview is provided of the internal and external financing and supportive measures.

2.5 Assumption of other tasks

The regulations on the involvement of doctoral candidates within teaching and the possibility of assuming further duties are shown here.

2.6 Qualification

With regard to the further qualification of the doctoral candidate, this section provides information on how much time this should take and what qualification options are available within the university.

3 Main phase

The focus of the main phase of the doctorate is the research by the doctoral candidate and the regular supervision work, as defined in the supervision agreement. As this is the longest phase, unforeseeable difficulties, conflicts, motivation problems, and crises can also typically occur here.

This point also refers to the need for conflict resolution strategies and the internal university ombudsman system. Possible causes of conflict are also listed, which is intended to enable these typical conflict situations to be discussed at an early stage.

4 End phase – preparing for the time after the doctorate

The end phase comprises the completion of the doctoral thesis, the doctoral examination, and the publication of the doctoral thesis. However, it is also the phase of supervision in which a focus should be placed on future career planning at the latest.

4.1 Career planning

Once the doctoral candidates have first actively thought about their career development themselves, the supervisor should draw the doctoral candidate's attention to various possible careers and support him or her in preparing for the envisaged career. The most important career paths and support options are discussed briefly under this point.

4.2 Completion of the doctoral thesis and preparation for the doctoral examination

This section provides information that the supervisor should note in order to ensure that the doctoral project is completed within the agreed time frame.

4.3 Publication of the doctoral thesis

With regard to the publication of the research results, important questions should be clarified, which are listed here.

III Particular challenges within supervision

1 Supervision that promotes gender equality

Promoting the equality of women at all levels within the academic community also concerns the supervision of doctoral candidates. The supervisor is once again sensitized to the specifics of this supervision situation here.

2 Supervision of international doctoral candidates

This point summarizes the most important points to be noted concerning the supervision of doctoral projects by international doctoral candidates and their intercultural situation. Typical cultural misunderstandings within the doctoral project are once again highlighted in order to promote smooth intercultural communication.

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I Introduction

TH Köln acknowledges its responsibility towards early-stage researchers, the promotion of whom represents an important societal task. High-quality doctoral candidate education also includes the best possible supervision of the doctoral candidate. These guidelines have been developed by the Standing Commission for Promotion of Young Researchers at TH Köln.¹ The aim of these guidelines is to ensure fair, performance-enhancing research and working conditions for the doctoral candidates in all faculties and institutes at the university – despite different traditions within doctoral candidate education in the various disciplines and individual supervision styles by different professors. The guidelines, which take the form of a self-imposed code of conduct, are intended to give new and long-standing academics alike helpful suggestions and orientation in order to successfully support doctoral candidates and ensure quality assurance within doctoral support at TH Köln.

The guidelines are in harmony with the directives on good scientific practice at TH Köln² and the principles of the European Charter for Researchers.³ They are based, among other things, on a series of recommendations and guidelines from other German and international universities⁴ and on the contributions and results of the 9th workshop by the Council for Doctoral Education at the European University Association (EUA-CDE) ‘Doctoral Supervision – practices and responsibilities’ on January 20 and 21, 2016, in Delft/Netherlands.⁵ The continuous efforts to improve the quality of the supervision of doctoral candidates at TH Köln also form part of the ‘Human Resources Strategy for Researchers’ within the university, for which the university was presented the HR Excellence in Research award by the European Commission in 2014.⁶

The guidelines for the good supervision of doctoral researchers were adopted by the Executive Board at TH Köln on March 22, 2017.

¹ This is comprised of the head of the Graduate Center, doctoral supervisors, the elected representatives of the doctoral convention at TH Köln, and an external expert.

² https://www.th-koeln.de/mam/downloads/deutsch/forschung/richtlinien_wiss-praxis_sn_en.pdf

³ <http://ec.europa.eu/euraxess/index.cfm/rights/europeanCharter>

⁴ E.g. LMU Munich, Leibniz University Hanover, FU Berlin, the University of Bergen and the University of Melbourne (see 4.1).

⁵ <http://eua.be/activities-services/events/event/2016/01/20/default-calendar/9th-eua-cde-workshop>

⁶ <https://www.th-koeln.de/forschung/hrs4r>

II Features of good supervision

The doctorate represents an independent and autonomous academic achievement by the doctoral candidate, which is accompanied and supervised by experienced academics. It can thus clearly be distinguished from the two cycles of fundamental studies (Bachelor and Master). Beyond subject-specific differences, the development processes of the individual doctoral candidates often deviate from each other. Good supervision thus caters individually to the doctoral candidate. Both the structured doctoral programs and the classic individual supervision of doctoral candidates are equal approaches,⁷ within which the doctoral candidates pass through similar phases and steps. The doctorate is also a qualification phase for a responsible occupational activity. Good supervision aims to prepare the early-stage researcher for work within a university, within business or in social institutions. The transparent structure of the doctoral phase and the scope and quality of the supervision have a major influence on the success of a doctoral project.

The professor assumes various roles as part of supervising a (cooperative) doctorate: that of an academic role model, mentor and careers advisor. As most doctoral candidates at TH Köln are scientific employees financed with third-party funds (67%), the supervisor is often also their manager and thus must not only ensure subject-related excellence for the doctoral project, but also meet the requirements of the project financed with third-party funds, the provider of the funds, and the consortium and industrial partners.⁸

First and foremost, a trusting relationship between the supervisor and doctoral candidate lies at the heart of good supervision.⁹ The **main tasks of supervision** for a doctoral project are:

- The provision of subject-related **support and encouragement as a mentor** for the otherwise independent academic achievement by the doctoral candidate, e.g. with regard to the content-related and time-based structure of the doctoral phase.
- **Ensuring the high quality** and academic relevance of the research in the doctoral project, e.g. through constructive feedback on the status of the doctoral candidate's research,
- Information on the principles of **good scientific practice**,
- The granting of adequate academic and time-related **freedom for the doctoral project**,
- Verification that the doctoral thesis will be completed within a suitable period of time.

According to European standards, good supervision also includes an introduction to the **national and international academic scientific community** and **advice on suitable professional career steps**. In this regard, the supervisor should analyze the qualification needs of the respective doctoral candidate and point him or her towards sensible further training options. The supervisor also has the task of offering the doctoral candidate support during problematic phases. Last but not least, **cooperative supervision by two supervisors demands particular attention and sensitivity** (especially in the event of differences of opinion), as this increases the potential for conflicts and complications.

⁷ Cf. HIS 2012, p. 45

⁸ Cf. UAS7 position paper "Promotion an Hochschulen für Angewandte Wissenschaften – Qualitätsstandards der UAS7-Hochschulen" 2016

⁹ Cf. Recommendations from the German Association of University Professors and Lecturers (Deutscher Hochschulverband) 2003

Besides the requirements stated, doctoral candidates wish the following from their supervisors:¹⁰

- A friendly and open supervision relationship,
- Interest in the research project, commitment, and availability of the supervisor,
- The conveying of well-founded subject-specific methodological knowledge and standards,
- The provision of navigation aids for research investigations,
- Timely, constructive feedback on their research work,
- Encouragement and supporting of their own activities in the scientific community,
- Support when establishing professional networks within the university, in the scientific community or within industry,
- Good working conditions and an adequate research infrastructure,
- Information on the processes and working methods in the respective faculty/institute/working group.

Not all supervision tasks must be assumed exclusively by the professors. Besides contact to other academics from the respective discipline, integrating the doctoral candidates into an organized research and working group also offers the opportunity for a joint critical discussion of questions, problems and results, e.g. as part of the doctoral colloquium.

The principles of good supervision will be examined in more detail below. These should cover all phases of the doctorate (see Fig. 1).

Preparation phase				Initial phase	Main phase	End phase
Interest in doctorate and clarification of suitability	Search for supervisor TH	Supervision confirmation TH	Admission to the doctorate (U) without requirements	Establishment supervision relationship and first steps Research	Research	Submission of doctoral thesis
	Search for supervisor U	Supervision confirmation U			Validation and documentation of research results	Oral examination/doctoral viva voce
	Search for financing		Admission to the doctorate (U) with requirements		Writing of the doctoral thesis peer-reviewed publications	Publication of the doctoral thesis in book form and/or online
	Topic identification					

Figure 1: The phases of the cooperative doctorate (U: university, TH: TH Köln)

¹⁰ The reforms to doctoral candidate education in the European research area were accompanied by a variety of surveys and studies focusing on the needs and satisfaction of the doctoral candidates. Cf. HIS 2012 or the surveys by the EUA-CDE member universities, which were presented as part of the 9th CDE workshop.

Excursus: The cooperative doctorate

Due to the applicable North Rhine-Westphalia university law, it is currently only possible to undertake a doctorate at TH Köln as part of a cooperative doctoral procedure (see Fig. 2). Over recent years, this path has been increasingly chosen by graduates from universities of applied sciences ('Fachhochschule') as well as by graduates from universities ('Universität') in Germany and abroad, as this allows them to benefit from the expert knowledge, infrastructure and respective advantages of both types of higher education institution (e.g. supervisors' close links to industry at universities of applied sciences). Even people who already work within industry frequently choose this doctoral route, often due to the close links that their company has with the academics at TH Köln.

A **cooperative collaboration** between the university of applied sciences and university supervisors **as part of the joint supervision** of a doctoral project is generally established via personal contact between the academics. The professor at the university of applied sciences is named as the first or second supervisor by the doctoral committee in the respective faculty. A cooperation with a foreign university is also a frequently chosen path, as the universities overseas do not distinguish between the German higher education types and only the academic excellence of the doctoral candidate and the expertise of the professor at the university of applied sciences are taken into account. The supervision of cooperative doctorates has also been possible as part of Graduierteninstitut NRW since 2016.¹¹

Where possible, a written **cooperation agreement** can be concluded between the cooperating university and TH Köln.¹² These agreements are generally concluded between a department/faculty at TH Köln and a department/faculty at the cooperating university, although overarching agreements between the two higher education establishments are also possible. In contrast to individual arrangements between two individuals without any official documentation, which poses a risk for the doctoral candidate with regard to the continuity of their supervision, a formal agreement ensures access to, admission to and the undertaking of a doctorate with a university of applied sciences degree and/or at a university of applied sciences on an institutional basis.¹³ The cooperation agreement determines the bilateral collaboration and equal responsibility of the respective professors at the university of applied sciences and university. It also generally determines whether and which requirements must be fulfilled by university of applied sciences graduates for admission to the doctorate at the respective university.

¹¹ www.gi-nrw.de

¹² Sample cooperation agreements for this are available in German and English and can be obtained from the Graduate Center if required.

¹³ Promovieren mit FH-Abschluss 2011, p. 14

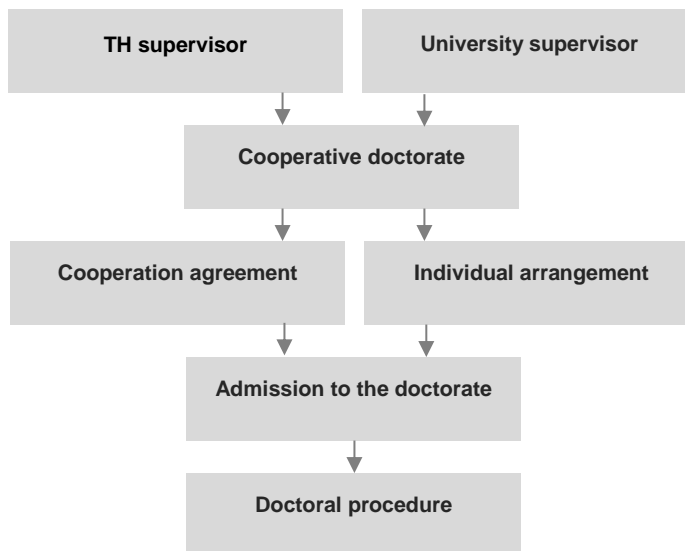


Figure 2: Structure of the cooperative doctoral procedure

1 Preparation phase

1.1 Initial consultation

Good supervision starts before a supervision relationship officially begins. An early, in-depth consultation to define the academic relevance of the doctoral subject and a realistic risk assessment with regard to the research work can significantly shorten the duration of a doctoral project. Together with the potential doctoral candidate, the supervisor must check that the formal criteria for a doctorate have been met.¹⁴ At the same time, however, the supervisor must also decide whether the previous academic activities of the candidate indicate suitability for this kind of multi-year research project. The educational history of the candidate as well as the planned method of undertaking the doctorate (e.g. alongside employment) should be taken into account in this.

Furthermore, the supervisor must assess whether the proposed research task can be managed by the candidate and whether the supervisor has the necessary subject-related skills to supervise the subject. The supervisor should also realistically assess their own capacities based on the high workload of university lecturers.¹⁵ In the interests of the doctoral candidate's further academic and professional career, the subject should ensure that a doctorate can be completed following a reasonable processing time. If the doctoral candidate is recruited as part of a project financed with third-party funds, the doctoral thesis subject should be selected, where possible, independently from the research project as the project may have a shorter duration than the doctorate or unexpectedly end prematurely.

It is recommended to systematically clarify key points concerning the doctoral project, supervision, and financing of the project in an **initial meeting** with the potential doctoral candidate.¹⁶ What career options are associated with a doctorate or which career path the doctoral candidate aims for should

¹⁴ E.g. excellent performance during Master's studies or, for international candidates, whether the foreign certificate qualifies them to undertake the doctorate. These are determined by the respective doctoral regulations at the university that awards the title.

¹⁵ If a supervision relationship is assumed by a professor who is due to retire shortly, it is advisable to clarify who would continue supervising the doctorate before the doctorate is begun.

¹⁶ The Graduate Center at TH Köln has created a checklist for the initial meeting (see Appendix 1).

also be discussed during this consultation.¹⁷ Lastly, it should also be mentioned that the doctoral committee sets any requirements that must be fulfilled upon admission to the doctorate at the cooperating university. These can be time-consuming, depending on the doctoral regulations and individual decision, and must be taken into account in the time plan for the doctorate. Following this initial meeting, the supervisor can draft a written supervision confirmation¹⁸, although this does not replace the supervision agreement (see 2.2).

1.2 Financing

The financing of the multi-year doctoral phase should be realistically assessed and discussed transparently at the latest at the start of the supervision relationship. As part of their duty of care, the supervisor should attempt to offer the doctoral candidate the best possible conditions in which to undertake the doctoral work. If the **doctoral candidate is/will be employed as a scientific employee at TH Köln**, the financing of the position should be maintained where possible until the doctorate is complete (within the usual doctoral periods for the subject).¹⁹ If this is not possible, for instance, because the project financed with third-party funds, via which the position is funded, has a limited duration, the supervisor should assist the doctoral candidate when searching for follow-up financing. As a rule, all scientific employees undertaking doctorates should be remunerated with a TV-L 13 position in order to ensure the equal treatment of all doctoral candidates at TH Köln.²⁰ If the doctoral candidate is employed as part of an employment relationship financed using third-party funding, the doctoral objective is not included in the job description. In all other cases, the research as part of the doctoral project and the creation of the doctoral thesis should be included in the job description.²¹

If there are no plans for employment at TH Köln (e.g. in the case of **scholarship holders**), the supervisor should make the prospective doctoral candidate aware of alternative financing options (such as doctoral scholarships)²² and support him or her where necessary in submitting an application (e.g. with a letter of recommendation).

It should also be clarified how **additionally incurred costs** (e.g. travel to the cooperating university, archive visits, research stays, consumables, conference attendance, publications costs) can be financed, both for scientific employees and for scholarship holders. If the doctoral thesis should be submitted in a language that requires the doctoral candidate to make use of professional translation services, these incurred costs must also be discussed as early as possible.

¹⁷ Here, too, it is important to make the doctoral candidate aware of which career paths can no longer necessarily be taken once a doctorate is achieved and that jobs that require a doctorate generally inevitably involve assuming greater responsibility. The candidate's career aims should thus be clearly defined at this time.

¹⁸ This means an informal confirmation, e.g. in letter form, that supervision is sought. This is to be submitted, among other things, when enrolling for the doctoral course at TH Köln.

¹⁹ Cf. Framework code "Gute Beschäftigungsbedingungen für das Hochschulpersonal" 2015 http://www.wissenschaft.nrw.de/fileadmin/Medien/Dokumente/Hochschule/Rahmenkodex_3._Juni_2015.pdf. One possible approach is the 'pooling' of resources to fill financing gaps within the faculties. It is also important to point out to prospective doctoral candidates that any work as a scientific employee or as an academic assistant at a university before the doctorate can have an effect on time limits, which can, in turn, impact the possibility of receiving financing for the entire period of the doctorate.

²⁰ Cf. the information from the DFG on the payment of doctoral candidates: https://www.google.de/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwi3hJqtovTRAhUGQB0KHYRRAsEQFggcMAA&url=http%3A%2F%2Fwww.dfg.de%2Fformulare%2F55_02%2F55_02_de.pdf&usq=AFQjCNFu_CANiCG0oaCmKFRhBz8FpYL0yA&sig2=Fkxzpi2I2S0v2sXX6ETnoA&cad=rja

²¹ The structure of the position with regard to weekly working hours should be based on the DFG recommendations.

²² The Graduate Center at TH Köln has created an overview of various scholarships for early-stage researchers: https://www.th-koeln.de/mam/downloads/deutsch/forschung/stipendien_a4_brosch_web.pdf

2 Initial phase – establishing a supervision relationship

Supervision must arise from the respective individual and specific conditions and needs of the doctoral candidate, although it must also always correspond to the interdisciplinary quality standards of TH Köln shown here. Outstanding achievements (e.g. high-level publications, extensive teaching obligations and also excellent evaluation results) are required from the doctoral candidate in order for the candidate to become established in the academic system. Clear expectations that offer a realistic image of the requirements and provide orientation should thus be communicated to the doctoral candidate right from the start. The transparency of the supervision relationship plays a crucial role in the success of the doctoral project.

The formal procedure to **initiate a cooperative doctorate** is summarized for prospective doctoral candidates on the Graduate Center website.²³ If a new doctoral candidate is accepted as part of a cooperative doctorate, this must be reported to the Graduate Center so that the candidate can be added to the doctoral register. She or he thus becomes part of the doctoral convention and can then access all services of the Graduate Center (doctoral qualification program, travel grants, etc.). The doctoral candidates can enroll at TH Köln once the cooperation with the supervising professor at the title-awarding university has been clarified.²⁴ It is strongly recommended that the supervisor clarifies involvement in the examination procedure at the university at an early stage.

The cooperative doctorate brings with it especially challenging framework conditions, particularly with regard to supervision by more than one academic from different types of higher education institution.²⁵ The supervision area defined for the university doctoral supervisor until that time no longer applies and is replaced by joint co-supervision.²⁶ What's more, the university of applied sciences supervisor generally has closer contact with the doctoral candidate during cooperative doctorates, as the candidate is in most cases employed by the supervisor as a scientific employee and works at the university of applied sciences within his or her research group.²⁷ Procedural standards for the cooperation as part of the doctoral procedure²⁸, binding agreements by the supervisors on the supervision concept, and a transparent division of responsibility are helpful here. One possible approach to joint supervision is the conclusion of a trilateral supervision agreement.²⁹ The coordination process between the two supervisors must not delay or prevent the doctoral process to a relevant degree.

Good supervision ideally begins with the conclusion of a binding, written **supervision agreement**³⁰, which should be concluded where possible at the start, at the latest after six months. TH Köln strong-

²³ https://www.th-koeln.de/en/research/interested-in-a-doctorate_44623.php

²⁴ Doctoral candidate status is awarded equally to enrolled students and scientific employees undertaking a doctorate. Scientific employees undertaking a doctorate at TH Köln do not have to enroll. All other doctoral candidates must enroll as only this gives them a legal status as a doctoral candidate, which has an effect on their insurance status (liability and accident insurance), while also enabling them to make use of the services for the doctoral candidates at the Graduate Center. Dual enrollment is permitted on the part of TH Köln. You can find information about enrollment at the following link: https://www.th-koeln.de/forschung/einschreibung-zur-promotion_1167.php

²⁵ Cf. Engelfried & Klotz 2016

²⁶ However, supervision in a team is not a specific characteristic of the cooperative doctorate, but is instead a practice that has proven of use in structured research training groups for doctoral students for many years and is required by providers of third-party funding, such as the DFG. Cf. also HIS 2012, WR 2002, WR 2011, UNIWIND 2014, Empfehlungen für die Gestaltung der Promotionsphase an der LMU 2010, etc.

²⁷ Cf. HIS 2012, p. 30

²⁸ Cf. HRK 2015, p. 3

²⁹ A template for this is currently being prepared. In addition to the points of the bilateral supervision agreement, the frequency and nature of the trilateral meetings, what to do if the interests of the three participants do not match, and the financing of necessary travel to attend lectures, meetings, and examinations at the cooperating university, among other things, should be set down here. See 2.2 for more details on the supervision agreement.

³⁰ The Graduate Center at TH Köln has created a sample supervision agreement in German and English, which is based on the template from the DFG and contains all of the stated fundamental points. It can be amended and supplemented as required (see Ap-

ly recommends using this proven tool, which can help to determine tasks, rights, and obligations of the doctoral candidate and of the supervisor, and create clarity regarding aims, methods, and requirements within the doctoral project.³¹ The supervision agreement can also take into account the different subject-related traditions and various situations of the doctoral candidates (e.g. family commitments, work). It is a dynamic document that is checked and enhanced regularly during the doctoral period. All of the activities set down in the supervision agreement represent obligations for both sides, the implementation of which should take place on the initiative of both parties.

The supervision agreement should be signed by the supervisor and the doctoral candidate and should contain at least the following points, in addition to the full names of both signatures, the working title of the doctoral thesis or the doctoral subject, and the language in which the doctoral thesis should be submitted:

- (1) Time and work plan
- (2) Regulations on working conditions
- (3) Nature and scope of the supervision relationship
- (4) Research environment
- (5) Assumption of other tasks
- (6) Qualification and networking

The joint creation of the supervision agreement is the most important supervision meeting during the initial phase and should be used to systematically discuss a wide range of subjects based on the template. The exact points are thus discussed in more detail below.

2.1 Time and work plan

The work plan is the **guideline for the content and timing** of the doctoral project. The supervisor should place great importance on the research-guiding questions being clearly identifiable and the doctoral candidate mastering the methods that should be applied. What questions and what volume of work can realistically be managed in the planned time frame should also be checked. Milestones should be set during the various stages of the research work and discrepancies should be addressed and corrected at an early stage. The time frame for the doctoral candidate's reporting obligations should also be part of the work plan. As research is always associated with uncertainties, the work plan is regularly updated, supplemented and adapted during the doctoral project.

2.2 Regulations on working conditions

The supervisor should ensure that the doctoral candidate is provided with an adequate workplace, access to the required laboratories or archives, the necessary equipment, software or other consum-

pendix 3 or: https://www.th-koeln.de/mam/downloads/deutsch/forschung/betreuungsvereinbarung_th_k__In.docx or https://www.th-koeln.de/mam/downloads/deutsch/forschung/betreuungsvereinbarung_-_englisch.doc). Once the supervision agreement is concluded, both parties receive an original. A copy is also provided to the Graduate Center. The submission of a concluded supervision agreement is required in order for the doctoral candidate to receive a travel grant to participate in conferences.

³¹ The conclusion of a supervision agreement is, for instance, standard in all DFG-funded Research Training Groups. However, the German Council of Science and Humanities and the HRK also require this type of tool to be used (cf. WR 2011, p.18, HRK 2012, p.5).

ables, and access to literature or other documents in order to undertake the planned doctoral project. This should also take place in coordination with the cooperating university.

The supervisor makes the doctoral candidate aware of the rules of good scientific practice³² that apply at TH Köln and the assurance of occupational health and safety at the university of applied sciences. Ethical aspects of the doctoral project must be considered at an early stage (e.g. with regard to data protection). If necessary, the consent of the Ethics Commission should be obtained early on.³³ The doctoral candidates who are scientific employees must also be informed that they must inform TH Köln as the employer of any inventions before publication.³⁴ With regard to the publication of research results gained as part of a project financed with third-party funds, the publication rights must be agreed with the cooperation partners and the provider of the third-party funding at the start of the project and communicated to the doctoral candidate if this has an effect on the research work within the doctoral project.

Necessary attendance times on site at TH Köln must also be clearly communicated (this applies above all to doctoral candidates who do not have an employment contract with the university of applied sciences). In the interests of a work-life balance, the personal situation of the doctoral candidate should also be discussed and the candidate's ability to combine the doctoral project and family should be ensured.

2.3 Nature and scope of the supervision relationship

The supervision relationship should be structured and transparent right from the start. This not only benefits the doctoral candidate, as clear agreements also make it easier for the supervisor to monitor the research process of early-stage researchers. Everyone involved in the supervision of a doctoral project should be named in the supervision agreement. The primary contact person and supervisor should also be determined in writing and the supervision relationship with the university professor discussed.

Regular supervision meetings are the cornerstone of good supervision. This makes a major contribution to the successful and timely completion of the doctoral project. The form of communication and frequency can be adapted individually to suit the subject-related customs and respective needs, although they should be determined and discussed from the start³⁵. However, in all contexts, a feedback and advisory meeting should be held with the supervisor at least once a semester³⁶ and supplemented by annual status and progression meetings, possibly with other contact partners (university supervisors, postdocs, colloquium participants).³⁷ In this way countermeasures may be taken within an adequate time frame if the project becomes infeasible for instance, difficulties are experienced when collecting data. A mutual exchange of expectations is essential at each of these meetings in order for all those involved to take action with the greatest possible confidence. To increase commitment, minutes should be taken of all of the meetings and signed by all of the participants in order to prevent subsequent misunderstandings.

³² See footnote 2

³³ An examination by the Ethics Commission can be requested via the Graduate Center.

³⁴ https://www.th-koeln.de/forschung/erfindungsmeldung_2720.php

³⁵ Communication generally tends to take place much more often in laboratory-based disciplines than in book and archive-based subjects, where longer intervals between the supervision meetings are commonplace.

³⁶ However, the EURODOC survey (2004) shows that doctoral candidates would usually like much more frequent contact.

³⁷ This is especially important if the doctoral candidate is not integrated into the working group as a scientific employee and/or is undertaking the doctorate alongside employment. In these cases, the dates for the meetings should be arranged over the long term and it is essential that they are observed.

The personal supervision meeting is generally one-on-one and its purpose is to discuss the progress of the doctoral project and any phase-specific concerns of the doctoral candidate, and submit a critical assessment of what has been achieved. The Graduate Center at TH Köln has created a leaflet on this (see Appendix 2). These meetings should be as undisturbed as possible and not be interrupted by phone calls or similar. This feedback meeting is based on the work plan with the agreed milestones and deadlines created as part of the supervision agreement. Fundamental questions on the research work should also be clarified, although the doctoral thesis should not lose its character as an independent, academic achievement.³⁸

While maintaining a professional distance, the supervision meeting also includes the provision of emotional support to the doctoral candidates and, where applicable, a discussion of any personal problems that influence the progression of the doctoral process. The personal meeting is also the place where conflicts (e.g. dissatisfaction with the supervision, dissatisfaction with the work attitude/performance of the doctoral candidate, feeling overloaded with tasks that do not relate to the doctorate) should be addressed and possible solutions investigated.

Revisions to the work and time plan following the supervision meeting and, if necessary, signing another agreement cannot be ruled out. The specified rhythm (e.g. monthly or quarterly) must not be interrupted too often because one of the participants cannot keep to the appointment. If this is frequently the case, the problem should be discussed in a timely manner.

The creation of written “progress reports”, overviews of previous research results or drafts of chapters of the doctoral thesis or other publications can be agreed as **preparation for the supervision meeting**, but also independently of personal meetings.³⁹ The frequency of the reports and the nature of the feedback from the supervisor should be clarified in advance.

In cases where a **managerial relationship** exists next to the doctoral supervision, the supervisors should be aware of this dual role and also hold employee-manager meetings with the employees.⁴⁰

Regular **team meetings with the entire research group** or the respective institute or faculty are also part of the supervision relationship. In an ideal case, an informal discussion is also possible, e.g. weekly over coffee or as part of institute celebrations. It is also strongly recommended to arrange team meetings, either of a formal or informal nature, with the university of applied sciences supervisor and the supervisor from the cooperating university.

2.4 Research environment and networking

Integration into the scientific community and establishing one’s own professional network are essential components of the doctoral phase. After all, the quality of a doctoral thesis also depends on the extent to which doctoral candidates succeed in positioning their own work in the context of the academic discussion. The doctoral candidate should be encouraged right from the start to report on their doctoral project and obtain feedback at various levels in their closer and wider research environment.

This includes publishing (interim) results **in national and international journals**.⁴¹ The supervisor should support the doctoral candidate in developing his/her own publication strategy and encourage him or her to undertake activities as an expert him/herself.⁴²

³⁸ Cf. Recommendations from the German Association of University Professors and Lecturers (Deutscher Hochschulverband) 2003

³⁹ These reports can sometimes be a fixed component of the requirements by the cooperating university. In order to prevent duplicate work, the form and submission deadline should thus be coordinated with both supervisors in order to relieve pressure on the doctoral candidate.

⁴⁰ Cf. <https://www.verwaltung.th-koeln.de/organisation/dezernatesg/dezernat2/sg23/service/u/04120.php>

It also comprises the presentation of the doctoral project and the initial research results:

- within the research group
- at (interdisciplinary) **research colloquia** on site⁴³
- as part of lectures at other working groups
- **at national or international conferences.**

As part of this, the doctoral candidates present their research work to a group of peers and obtain constructive criticism and stimulus from other researchers. Here, the supervisor can actively support the doctoral candidate by drawing his or her attention to conferences that are relevant to the doctoral subject. Regardless of the acceptance of a submitted contribution, every doctoral candidate should participate in at least one national or international specialized conference as these trips also help to **establish and maintain a network**. A **research stay overseas** is also advisable in terms of networking and international experience. The **financing of the mobility measures** should be governed in the supervision agreement and any possible assumption of costs by the institute/faculty set down in writing, where possible. Alternatively, the supervisor can indicate financing options both within the university and externally, and provide assistance when applying for these.⁴⁴

Lastly, an **intersectoral exchange** with industry can also be beneficial for the doctoral candidate. Secondments within industry can also strengthen the candidate's network outside the academic system, which may be of great importance for a career in the private sector later on, or provide innovative stimulus for the student's own research work.

2.5 Assumption of other tasks

Regardless of their formal connection to the university, all doctoral candidates should have the opportunity to gain their own teaching experience.⁴⁵ These **teaching activities** should have an appropriate duration and not cause delays in the doctoral project.⁴⁶ If teaching activities are not specifically governed in the employment contract, these should be agreed upon individually and the precise number of hours set down in writing as part of the supervision agreement.

⁴¹ In certain disciplines, it is common practice to publish together with the doctoral supervisor or with other members of the working group. However, it is essential that good scientific practice is observed here and no honorary authorship is granted. The publication activity of the doctoral candidate is usually restricted to conference contributions and articles in peer-reviewed journals. The supervisor should also draw the doctoral candidate's attention to other possible forms of academic communication (e.g. scientific magazines, newspapers, interviews, websites, blogs, exhibitions, etc.).

⁴² The Graduate Center at TH Köln offers an abstract proofreading service and recommendations on proofreading and translation providers.

⁴³ In the doctoral colloquia, joint publication activities can also be planned or solutions developed for existing problems within individual research work and doctoral projects. It is also possible to occasionally invite external speakers on certain topics to the colloquia in order to discuss current developments and the current status of research together.

⁴⁴ The Graduate Center provides support when searching for suitable funding options. The Graduate Center offers a travel grant for doctoral candidates to allow them to actively participate in meetings or conferences: http://cms-dev.verwaltung.fh-koeln.de/imperia/md/content/referat5/intern/promotionen_f_rderprogramm_konferenzbeihilfen.pdf

The DAAD scholarship program is also worthy of particular mention: www.daad.de/ausland/studieren/stipendium/de/70-stipendienfinden-und-bewerben/?detail=50722601.

Shorter overseas stays can e.g. be financed via the personal mobility funding program within the ERASMUS+ program: www.th-koeln.de/internationales/erasmus-personalmobilitaet_7996.php

⁴⁵ It is possible to participate in further training in didactics within higher education (see 2.2.6).

⁴⁶ The following regulations apply to research associates at TH Köln: In the event of a full-time position, the scientific employee can assume teaching duties up to 4 weekly hours per semester. In the event of a part-time position, this is reduced by the corresponding percentage.

As a scientific employee, the doctoral candidate can also assume **other duties** and e.g. tasks within administrative self-management or the supervision of qualification work (Bachelor/Master). It is also sensible to involve doctoral candidates in the development of applications for third-party funding in order to impart the basic principles of writing research applications. As part of this, however, the doctoral candidate should always be granted sufficient time to continue the doctoral project and the additional tasks should either relate to the doctoral thesis or take place as part of skills development (e.g. project management, examination and leadership skills etc.).⁴⁷

2.6 Qualification

All doctoral candidates should have sufficient scope to personally gain further qualifications. The supervisor can provide support here by informing the doctoral candidates about **qualification opportunities** for personal and professional further development and releasing them from other tasks so they are able to use these opportunities. The Graduate Center at TH Köln recommends further qualification and personal development totaling between 9 and 12 ECTS credits or around 60 hours pro semester. Corresponding agreements with regard to both the scope and the content should form part of the supervision agreement.⁴⁸ The Graduate Center at TH Köln offers a generic **doctorate-accompanying program**, which can be made use of free of charge, so that doctoral candidates can acquire transferable skills.⁴⁹ However, further training seminars outside the university of applied sciences, such as at the cooperating university, should be taken into consideration here.

3 Main phase

During the main phase, the focus lays on the research by the doctoral candidate and thus the implementation of the work plan. It also comprises all of the activities set down in the supervision agreement, the regular supervision meetings (see 2.3), and the validation and documentation of the research results. However, this long phase is typically also characterized by unforeseen difficulties during the research work, conflicts, motivation problems, or crises, which need to be overcome.

Crises and conflicts

Crises and conflict situations can occur within a multi-year doctoral project. These can be of an academic or a personal nature and may have a significant negative influence on the supervision relationship and the collaboration. For instance, “thoughts of dropping out among university of applied sciences employees undertaking doctorates [...] are primarily promoted by greater uncertainty concerning the financing of the doctorate (e.g. once a project has ended) and the high workload (due to duties outside the doctorate)”.⁵⁰

Within the doctoral project, different **conflict resolution strategies** should be available and discussed at the start of the supervision relationship. Ideally, these should be set down in writing in the supervision agreement. In the event of very close spatial proximity, it is advisable to nevertheless maintain a professional distance between supervisors and doctoral candidates. In principle, an attempt should be made to resolve conflicts on an informal level with the minimum of fuss. If agreements or the resolution of a problem is not possible between supervisors and doctoral candidates or within the faculty – even by involving the university supervisor – TH Köln has appointed two **om-**

⁴⁷ Cf. Byrne, 2011, p.55

⁴⁸ Cf. Concept to promote early-stage researchers TH Köln 2015

⁴⁹ Participation in a doctorate-accompanying program at the Graduate Center is voluntary. A certificate is issued following participation in a qualification program. More information: https://www.th-koeln.de/forschung/programm_30531.php

⁵⁰ Cf. HIS 2012, p. 49

budsmen, who all of the academics at the university of applied sciences can approach in the event of academic misconduct, but also generally as a confidant and intermediary.⁵¹

Possible causes of conflict within the doctoral project can be:

- (1) Academic misconduct by the doctoral candidate, e.g. due to plagiarism, “counterfeiting” (invention/modification) of results, by omitting negative results (cherry-picking), or by keeping other authors or assistants secret (e.g. Bachelor/Master students)
- (2) Academic misconduct by the supervisor, e.g. by granting honorary authorship, by suppressing results by the doctoral candidate (that e.g. contradict their own results), or by involving a scientific employee as a second examiner if the supervisor acts as the first examiner in the same examination (due to the dependent relationship)
- (3) Different ideas concerning the thematic direction of the work
- (4) Jeopardizing the mental health of the doctoral graduate (but also of the supervisor) due to stress – triggered by their private situation or work situation⁵²
- (5) Conflict situation due to a lack of agreement between both supervisors as part of the cooperative doctorate or due to conflict between the doctoral candidate and the university supervisor.
- (6) Conflicts between the doctoral candidate and other team members (e.g. demarcation/overlapping of doctoral thesis subjects)
- (7) Conflicts with people outside the team e.g. from the faculty (example: doctorate is considered a private matter, not as part of the working hours)
- (8) Topics relevant to the employment contract, such as:
 - The involvement of scientific employees financed with third-party funding in duties unrelated to the doctorate, which exceed the actual working hours and keep the doctoral candidate from the doctoral project, or are not covered by the employment contract (e.g. teaching, examination supervision), which, among other things, also leads to conflicts when recording hours for the respective third-party funded project⁵³
 - The involvement of scientific employees at training institutions in too many duties unrelated to the doctorate that are not included in the job description
 - There is no workplace available for the doctoral candidate
 - The possibility of working from home is not granted to the doctoral candidate (which may prevent the doctoral project and family from being compatible)

If the doctoral candidate would like to discontinue the doctorate without a conflict existing with the supervisor, it should be considered jointly whether this is the right decision and what steps the doctoral candidate can take next. If the supervisor considers the discontinuation of the doctorate to be sensible, e.g. because the doctoral period is already taking too long or for other reasons, an attempt should be made to decide to end the doctorate by mutual agreement. If this situation causes conflict, the aforementioned conflict resolution strategies should be applied.

⁵¹ https://www.th-koeln.de/hochschule/ombudsmann_8462.php

⁵² Cf. for instance: <http://www.spiegel.de/lebenundlernen/uni/promotion-wenn-es-zum-streit-mit-dem-doktorvater-kommt-a-1063819.html> or <http://science.sciencemag.org/content/354/6311/514>. What’s more, scientific employees undertaking doctorates generally have temporary employment contracts, which only allow for limited career planning and lead to great uncertainty for those affected.

⁵³ According to the HIS study, doctoral candidates at universities of applied sciences are involved in teaching for an average of 6.6 weekly hours per semester, compared with just 3.8 weekly hours per semester at universities. However, 31% of the doctoral candidates entrusted with teaching duties at universities of applied sciences would like to do less teaching (cf. HIS 2012, p. 62f.).

4 End phase – preparing for the time after the doctorate

A schedule should be created for the end phase, taking into account the necessary time for final editing, for the assessment, and the timing of the oral examination or viva voce. The doctoral candidate's further career planning should be considered at the latest now if this did not already take place in the main phase.

4.1 Career planning

Most doctoral candidates leave the university and academic system.⁵⁴ Good supervision thus also consists of addressing and supporting career planning for the doctoral candidate during the doctoral phase in preparation for the time after the doctorate. Based on knowledge of the doctoral candidate's qualifications, strengths, and weaknesses, a conversation should be held regarding what future path appears sensible and realistic while highlighting the different options within professional practice. Possible occupations include working in:

- Academia (junior professorship, professorship at a university or university of applied sciences)
- Science management
- Authorities, administration
- Industry
- Private sector
- Self-employed

The supervisor can make the doctoral candidate aware of participation in career workshops and coaching sessions or of advisory services relating to this, and suggest specific measures in order to become qualified for the envisioned career. Also career paths of the supervisor's former doctoral candidates, within or away from academia, can act as a guide.

If the doctoral candidate is aiming for an academic career, the supervisor can assist him or her when searching for a postdoc position. The publication 'track record' begun during the doctorate and the doctoral candidate's established network are of particular relevance here. With regard to the career option of a professorship at a university of applied sciences, the early-stage researcher often lacks knowledge of the appointment criteria, which the supervisors can remedy.

4.2 Completion of the doctoral thesis and preparation for the doctoral examination

It is recommended that the supervisor asks for provisional results during the main phase of the doctoral procedure and looks at the linguistic presentation with the doctoral candidate. If this only takes place during final editing, this can cause significant delays in the completion of the doctoral thesis. The supervisor and the doctoral candidate agree on the time frame for the proofreading phase and the subsequent submission of the revised parts. It is also decided whether individual chapters or the entire doctoral thesis will be submitted to the supervisor for proofreading.

In order to ensure that the doctoral project is undertaken quickly, there should generally be no more than four months between the submission and defense of the doctoral thesis. To prepare for the oral examination/viva voce, the doctoral candidate should be encouraged to participate in preparatory workshops at the cooperating university and attend other doctoral examinations. The procedure and requirements of the doctoral examination should be communicated in a transparent way.

⁵⁴ 50% immediately after receiving the title and a further third within the next five years, meaning that only 5-10% pursue an academic career (cf. HIS 2012, p.47f.).

4.3 Publication of the doctoral thesis

The doctoral candidate must be informed in good time of the framework conditions for the publication of his/her doctoral thesis. The following questions should be answered:

- Does the doctoral thesis (still) need to be translated?
- What is the final editing process? Is it necessary to have the text proofread professionally?
- Where should the doctoral thesis be published? Which publisher/journals are a possibility?
- What is the copyright situation for any images and graphics used? Are any costs incurred due to this use?
- Is an online publication sensible? If so, which open access repositories come into consideration here?⁵⁵
- What publication and printing costs are incurred due to the publication and how can they be financed?⁵⁶

III Particular challenges within Supervision

1 Supervision that promotes gender equality

TH Köln considers gender equality to be a matter of course. However, “the involvement of women in the academic system and in managerial positions [still] does not correspond to the proportion of well-qualified women.”⁵⁷ The proportion of women decreases with every qualification stage, which is particularly visible in the field of professorships.⁵⁸ TH Köln is committed to counteracting this phenomenon, known as the “leaky pipeline”, with specific measures to promote gender equality in order to encourage the equal involvement of women at all levels of the academic community as well as outside the higher education system, particularly in top positions. The explanations for the underrepresentation of women in top positions go beyond traditional individual-psychological and biographical patterns of explanation and are often accepted in the academic community and the overall social situation. Thus, it is of an even higher importance that the supervisor also plays an active mentoring role and shows empathy for the type of pressure that women are subjected to within the academic community.⁵⁹

Female candidates should be encouraged to undertake a doctorate, especially in subjects in which women with doctorates are underrepresented compared to the proportion of female undergraduates. Gender stereotypes and gender bias should absolutely be avoided within the supervision relationship. What’s more, personal career development after the doctorate should represent an especially

⁵⁵ TH Köln has publication series for the publication of the doctoral theses of its doctoral candidates on the publication server Cologne Open Science. <https://cos.bibl.th-koeln.de/home>

⁵⁶ In special cases, TH Köln offers its doctoral candidates a printing subsidy for the publication of the doctoral thesis. More information on this can be obtained from the Graduate Center.

⁵⁷ Announcement by the Federal Ministry of Education and Research of guidelines to implement the Women Professors’ Program II by the federal government and states to promote the gender equality of women and men in science and research at German universities (2012). www.bmbf.de/foerderungen/bekanntmachung-797.html

⁵⁸ Cf. HRK 2012, p.8

⁵⁹ Cf. University of Melbourne 2006

important topic within the supervision of doctoral candidates.⁶⁰ It should also be ensured that family planning during the doctorate does not necessarily have to be a reason to discontinue the doctorate.

The Graduate Center at TH Köln offers a free coaching program specifically for female doctoral candidates since 2016⁶¹, as part of the promotion of women.

2 Supervision of international doctoral candidates

International doctoral candidates require special attention: Besides general supervision, they require guidance in administrative and practical matters, such as looking for an apartment, visa and insurance arrangements, and other formalities, especially at the start of their research stay.⁶² They should be helped to learn the German language and familiarize themselves with the prevailing academic methods and approaches in the German higher education system and their particular discipline as part of the doctorate-accompanying program at TH Köln.⁶³

During the supervision relationship, the supervisor should always place importance on particular intercultural sensitivity and investigate the expectations of the doctoral candidates more closely than for German doctoral candidates. At the same time, the supervisor should clearly define and set down his or her own expectations of the doctoral candidate in written form. Within an intercultural academic dialogue, problems often arise because of different communication intentions become lost among linguistic and cultural differences. A culturally different understanding of the authority of the supervisor and the hierarchical structure as well as the manner of expressing and accepting criticism are typical problem areas.⁶⁴ Supervisors should address these cultural differences openly and must be aware that accepting international doctoral candidates may involve a greater expenditure of time.⁶⁵

IV Literature

1 Best practice examples from other universities

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www.fu-berlin.de/sites/promovieren/media/pdf/Leitlinien-gute-Betreuung__Verabschieded-PS-10_11_2014.pdf

⁶⁰ According to the HIS study, women feel far less supported than their male doctoral colleagues, especially with regard to academic publishing and establishing academic contacts and networks – two important aspects for a future career (cf. HIS 2012, p. 49).

⁶¹ More information on this can be obtained from the Graduate Center.

⁶² English-language forms and explanations are available for enrollment on a cooperative doctoral course at TH Köln. There is also an English sample supervision agreement at TH Köln:

https://www.th-koeln.de/mam/downloads/deutsch/forschung/betreuungsvereinbarung_-_englisch.doc.

The guidelines of good scientific practice at TH Köln are also available in English:

https://www.th-koeln.de/mam/downloads/deutsch/forschung/richtlinien_wiss-praxis_sn_en.pdf.

Other translations of existing documents and the development of a 'welcome brochure' containing all relevant information for international doctoral candidates are in progress.

⁶³ The program of courses coordinated by the Graduate Center includes a variety of English-language seminars. In collaboration with the Language Center at TH Köln, free 'German as a foreign language' courses are also offered to doctoral candidates.

⁶⁴ Cf. Cree 2012 and Guilfoyle 2006

⁶⁵ Cf. Qualitätszirkel Promotion 2010, p. 17f.

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Appendix 1: Checklist – initial consultation on a doctoral project

The aim of the initial meeting is to clarify expectations of the potential supervisor and the potential doctoral candidate. Besides discussing the idea for the doctoral subject and the doctoral candidate's prior knowledge, the following points should also be mentioned:

1. What **financing options** exist for the doctoral project?

- Financing method: Scientific employee/scholarship/industry/private (if financing is unclear, do not make any financing guarantees so as not to raise any false expectations)
- Discussion of possible problems based on the time limits (especially if previously employed at a higher education institution as an academic assistant or scientific employee)
- Wishes/expectations of the candidate (if applicable, support when applying for a scholarship or complementary financing for travel and research stays)
- Expectations of the supervisor (involvement in teaching, etc.)

2. What **career goals** are pursued with the doctorate?

- Academic career
- Career outside academia

3. Clarification of the **framework conditions** of the doctoral project and the expectations of the doctoral candidate and the supervisor with regard to, e.g.:

- The subject-related proximity of the supervisor to the doctoral subject
- Individual doctorate or doctorate in a structured doctoral program?
- What are the expectations of the supervisor and the doctoral candidate?
- Content-related scope and time frame of the doctoral project
- Availability of spatial or equipment-based resources and research funds to successfully undertake the project
- What is the structure of the research group on site?
- How should the research process be monitored? (e.g. by means of progress reports)
- What difficulties with regard to the research work or data collection can already be identified now and how can these be avoided?

4. Clarification of the specific characteristics of the **cooperative doctorate**, e.g.

- What criteria must be met for admission to the university? Does the location of the cooperative university present an obstacle in this regard? Are there doctorate suitability tests or requirements for admission? If so, what is the anticipated scope of the activities to be performed? Is it also possible to acquire any necessary ECTS at TH Köln?
- How does enrollment take place at TH Köln and at the university?
- Best practice experiences by doctoral candidates at TH Köln
- Is there already contact with a possible co-supervisor at a university (by the prospective doctoral candidate or the potential supervisor)?
- Clarification of the different responsibilities of both supervisors at the university of applied sciences and university: Who is the primary contact person? What will the supervision relationship with the supervisor at the university be like? Who is the first and second examiner? What exactly are the examination arrangements at the cooperating university?

- In what form must the doctoral thesis be submitted (cumulative or monographic doctoral thesis)?

At the end of the initial meeting, it should be clear to both parties whether a supervision relationship has been agreed.

Appendix 2: Information sheet for consultation meetings⁶⁶

- Determine an informal agenda with the doctoral candidate at the start.
- Agree on the length of the meeting in advance and keep to it.
- Prepare for the meeting by once again considering the current status of the doctoral project.
- Hold the meeting in a quiet location. Avoid disruptions, e.g. caused by telephone calls.
- Pay attention to the motivation of the doctoral candidate – do you see signs of a crisis?
- Together with the doctoral candidate, note down the most important points discussed and provide him/her with a copy.
- Draw the doctoral candidate's attention to periods in which you may not be available to provide feedback (vacations, business trips, research stays, etc.).
- Record and archive the documents concerning the supervision of the doctoral project. This also makes the collaboration and agreements with the university supervisor easier. A file on the doctoral project is also helpful in case a colleague has to take over the supervision.

Possible questions

- What is the status of the work?
- Which of the milestones set down in the work plan have been achieved?
- Which documents, chapter sections, etc. need to be discussed?
- What further qualifications (seminars, etc.) should be undertaken in the next semester?
- Which conferences that are suitable for participation or even for the presentation of the interim results of the doctoral work are scheduled in the next year?
- What measures must now be taken for the student's further professional career?
- What is the current time and work plan like? Might this need to be amended?
- What work steps should take place by the next meeting?
- Are there any other important points that need to be discussed?
- When is the next meeting held?

⁶⁶ Cf. Universität Bielefeld 2010 and University of Melbourne 2006

Appendix 3: Sample supervision agreement

Supervision agreement regarding the completion of a doctoral thesis

1 Participants

Doctoral candidate: Title First name Surname

Supervisor: Title First name Surname

(If necessary, name of mentor and other participants)

2 Cooperating university

Name of the university:

Faculty:

University supervisor: Title First name Surname

3 Subject of the doctoral thesis

(If necessary, working title)

4 Time and work plan structured according to content and its further development

A period of three years is provided for the completion of the doctoral thesis. A time and work plan is created for this period, which sets interim goals and milestones. (The time and work plan is an appendix to this agreement.) A meeting is held between the doctoral candidate and the supervisor each year in order to check whether the agreed time plan has been realized or is feasible and in order to amend this by mutual agreement where necessary.

5 Reporting obligations

Ms./Mr. _____ will regularly report to Prof. _____ regarding her/his work results. If available, she/he will submit the content-related partial results weekly/monthly/... and document and discuss the way forward.

6 Supervision obligations

Prof. _____ will regularly (X/month) provide expert advice to Ms./Mr. _____ during her/his doctoral thesis and discuss the submitted work results. The expert advice and support are oriented towards promoting and monitoring the early academic independence of Ms./Mr. _____. What's more, Prof. _____ will support Ms./Mr. _____ when beginning her/his further career.

Please note: The commitment to provide supervision until the completion of the doctorate is independent of the duration of the financing of the doctorate.

7 Integration

Ms./Mr. _____ will be integrated into the working group XXX/the research consortium XXX/the graduate program XXX as part of her/his doctoral thesis and participate in their seminars/accompanying events, etc.

8 Workplace

A workplace with the following equipment is made available to Ms./Mr. _____ in order to work on her/his doctoral thesis: (PC/Internet access/telephone/laboratory space/...).

9 Participation in conferences

Ms./Mr. _____ will participate in X specialized conferences (per year/in total) as part of her/his doctoral thesis. The participation in X conferences involves the presentation of the stu-

dent's own contribution (poster/talk), X conferences can be attended without the student making their own contribution. €XXX per year is available to finance conference participation.

10 Peer-reviewed publications

Ms./Mr. _____ will publish at least X peer-reviewed publications on her/his doctoral thesis subject in relevant journals as part of her/his doctoral thesis. Prof. _____ will provide expert and organizational support to Ms./Mr. _____ for the planned publications. The costs of the publications are covered with money from the working group/institute/faculty.

11 Residence abroad

Ms./Mr. _____ will spend X months abroad during her/his doctoral thesis. This stay involves the acquisition of new knowledge on the doctoral subject/developing foreign language skills/learning a specific or new methodology/maintaining contact with a cooperation partner or the cooperating university. To finance the residence abroad, Ms./Mr. _____ will seek a scholarship _____ /The residence abroad is financed as part of the third-party funded project _____ /with money from the faculty/ ...

12 Transferable qualifications

Ms./Mr. _____ will use XX hours of her/his working time to develop transferable qualifications during her/his doctorate. The attendance of events or seminars suitable for this will be coordinated with Prof. _____ and – if possible – will be confirmed by acquiring a statement or certificate.

Prof. _____ will support Ms./Mr. _____ in acquiring transferable qualifications and is willing to grant her/him the corresponding working time.

13 Integration into teaching

Ms./Mr. _____ will be involved in X weekly hours of teaching during her/his doctoral thesis.

14 Principles of good scientific practice

Prof. _____ has informed Ms./Mr. _____ about the principles to ensure good scientific practice (<https://www.thko->

[el.n.de/mam/downloads/deutsch/forschung/richtlinien_zur_sicherung_guter_wissenschaftlicher_praxis.pdf](https://www.thko-el.n.de/mam/downloads/deutsch/forschung/richtlinien_zur_sicherung_guter_wissenschaftlicher_praxis.pdf)). Both parties commit to observe these rules and act accordingly.

15 Regulations in the event of a conflict

Prof. _____ and Ms./Mr. _____ strive to address and mutually resolve any conflicts that occur during the doctoral thesis. If this should not be successful, both parties will seek to involve an unbiased third party, who will mediate between both parties.

16 Measures or regulations on balancing family and academic work

The ability to balance family and academic work is particularly supported. Specific funding measures are agreed where required.

Appendix 4: Case studies cooperative doctorate

Case study 1

University of applied sciences graduate, scientific employee in a project financed with third-party funds at TH Köln, supervisor at TH Köln (TH), supervisor at cooperating university in Germany (U), mentor (M)

1. Making contact and first steps

Initial contact arose by means of an optional required subject, which also looked at current research subjects. This resulted in initial interest and the subject of a thesis. During the following Master's course, the student began working as an academic assistant within research projects. This led to close integration into the team and an introduction to the research subjects being investigated. Initial joint publications were also written and interest in a doctorate developed. It was also important here (as a university of applied sciences graduate) to be made aware of this possibility and receive support in choosing this path.

2. Preparation of the doctoral thesis

The Master's degree (TH) enables registration for a cooperative doctoral thesis at a German university. Contact was initiated with the supervisor (U) via the supervisor (TH). In several meetings with the supervisor (TH) and two joint meetings with the supervisor (U), the dissertation subject was worked out and possible research questions discussed. The formal conditions of registering for and undertaking the doctoral thesis were also discussed: Requirements for admission by the doctoral committee (U), necessity of enrollment (U or TH), expectations regarding publications during the work and selection of a mentor (M). It was very helpful to clarify these 'soft' and 'hard' conditions as early as possible.

3. During the doctoral thesis

During the initial period, a supervision agreement was concluded between the supervisor (TH) and the doctoral candidate, which governs the following points, among others: Involvement in research projects and teaching, support with publications and conference contributions, work and time plan, frequency of meetings/reports, possibility of residences abroad, principles of good scientific practice.

Meetings on the progress of the doctoral thesis were held at least monthly. The meetings allowed for initial feedback on new ideas, ensured the correct focus within the research, helped to identify problems at an early stage, and were ultimately also an important motivating factor. This was especially important at a central time in the doctoral thesis: After a certain period of settling in, it became clear that the focus of the work should be transferred towards a more interesting and more promising subject. Meetings were held regarding this, including together with the supervisor (U). These were a great help in decision-making. Looking back, this decision (changing the thematic priority) was also the right one.

Two individual meetings a year were held with the mentor (U requirement, provides independent advice to the doctoral candidate, including in cases of conflict). Furthermore, written reports on the progress of the doctoral thesis were also discussed once a year together with the mentor (M) and supervisors (TH and U).

Results and questions were presented to the working group in regular seminars four times a year. As the seminars consist of doctoral candidates with similar areas of research, the doctoral candidate received relevant, extensive feedback. Problems did not have to be explained from the start each time. The open collaboration also allows critical questions to be discussed well.

There was a great deal of support provided for drafting publications and participating in conferences and similar events: three national and two international workshops and seven international conferences were attended. Interaction with the community was not limited to typical presentations. Interactive workshops were supported, posters presented and also more extensive tutorials given jointly at conferences. What was important here: financial support (or support when applying for funding), content-related encouragement, and, above all, the provision of sufficient scope for research and to attend events. Passing on contacts at other research groups was also very helpful.

Finally, involvement in teaching and research projects was also an important point. It was possible to pass on the doctoral candidate's own learning successes to other students in Master's courses. Ideas could be exchanged within project work. It was possible to gain important experience during involvement in applications for (national) funding programs and in collaborations within projects financed with third-party funds.

4. Completion phase of the work

In preparation for completion, it was discussed with the supervisors (TH and U) what important steps were still yet to be taken, what the rough division of time should be for the final phase, and how the written draft should be structured. It was important here to gain indications of whether the work completed so far also allowed a prompt completion to be expected. It is often difficult for a doctoral candidate to assess the status of their own work. This observation also applies to the period before the end phase.

Case study 2

University graduate, scientific employee within the permanent staff office at TH Köln,
supervisor at TH Köln (TH), supervisor at cooperating university in Germany (U)

The doctorate did not begin as a cooperative doctorate. A first supervisor, who was able to supervise the specialized work both formally and in terms of content, was found directly at a university (U). One year later, a supervisor (TH) was officially appointed as the second supervisor, which now allowed for a cooperative doctorate.

The doctoral candidate was initially employed as a scientific employee at the university, although it was not possible to extend the position due to a lack of resources. This led to a financial crisis for the doctoral candidate. Attempts were thus made to find a solution, enabling the start of a part-time scientific employee position with the supervisor at TH Köln limited until the planned end of the doctoral project over two years (permanent staff office).

As the student was part of the permanent staff office, a variety of activities unrelated to the doctorate were undertaken, which significantly restricted the time frame and workload for the doctorate. However, the contractually governed number of working hours per week was respected and attempts were made to ensure sufficient scope for the doctorate.

As a result of the employment by TH Köln and the spatial proximity that this created, this supervisor (TH) became more greatly involved and a close collaboration developed between both supervisors, even beyond the supervision of the doctoral project. Besides trilateral supervision meetings in person with both supervisors (TH and U), bilateral supervision discussions also took place via personal contact or e-mail.

Furthermore, involvement in the researcher groups and colloquia, and participation in further activities at both universities were a large part of the doctorate. The opportunity to participate in selected qualification seminars as part of the services offered by both higher education institutions was actively exploited and the doctoral candidate assumed individual teaching duties at both institutions with an adequate expenditure of time so as not to impede the doctoral project.

The travel expenses and other expenses within the doctoral project were assumed on an alternating basis by the university and TH Köln.

Finally, it was possible to ascertain that the supervision arrangement (cooperative supervision) provided real added value within the doctoral thesis work and for the completion of the doctorate as a whole.

Appendix 5: Helpful information, links and detailed bibliography

The Graduate Center at TH Köln

The Graduate Center is the central point of contact for all questions relating to the cooperative doctorate at TH Köln. In collaboration with the faculties, the research training groups at TH Köln, and other institutions, the Graduate Center at TH Köln has set itself the aim of improving the quality and framework conditions of cooperative doctorates.

With various interdisciplinary services, the Graduate Center offers doctoral candidates and supervisors a framework for networking and further qualification. The university-wide doctoral convention supports networking within the university of applied sciences and strengthens the identity of the doctoral candidates as a group. The Commission for Promotion of Young Researchers monitors the development of the Graduate Center, provides expert input on quality assurance for doctoral procedures, and advises on the further development of the services.

https://www.th-koeln.de/en/research/graduate-center_44622.php

graduatecenter@th-koeln.de

Information:

For prospective doctoral candidates: https://www.th-koeln.de/en/research/interested-in-a-doctorate_44623.php

For international doctoral candidates and prospective doctoral candidates:
www.th-koeln.de/en/young-researchers_6367.php

Enrollment: www.th-koeln.de/forschung/einschreibung-zur-promotion_1167.php

Doctorate-accompanying program: www.th-koeln.de/forschung/programm_30531.php

Travel grant: www.th-koeln.de/forschung/foerderprogramme_30053.php

Good scientific practice (German): www.th-koeln.de/forschung/gute-wissenschaftliche-praxis_2412.php

Good scientific practice (English): www.th-koeln.de/mam/downloads/deutsch/forschung/richtlinien_wiss-praxis_sn_en.pdf

Ombudsman: www.th-koeln.de/hochschule/ombudsmann_8462.php

Rules of procedure at the Graduate Center: http://cms-dev.verwaltung.fh-koeln.de/imperia/md/content/referat5/intern/gesch_ftsordnung_graduiertenzentrum.pdf

Templates and brochures at TH Köln:

Sample supervision agreement (German): www.th-koeln.de/mam/downloads/deutsch/forschung/betreuungsvereinbarung_th_k__ln.docx

Sample supervision agreement (English): www.th-koeln.de/mam/downloads/deutsch/forschung/betreuungsvereinbarung_-_englisch.doc

Scholarship brochure: https://www.th-koeln.de/mam/downloads/deutsch/forschung/stipendien_a4_brosch_web.pdf

Doctoral guides for doctoral candidates:

- **FH Hannover** (2011). *Promovieren mit Fachhochschulabschluss – Informationen und Praxisbeispiele für die Beratung und Unterstützung Promotionsinteressierter*.
www.hs-hannover.de/fileadmin/media/doc/gb/Publicationen/Broschuere_Promovieren_Downloadversion_01.pdf
- **Thesis & DHV** (2009). *Best-Practice-Papier zwischen Thesis – Interdisziplinäres Netzwerk für Promovierende und Promovierte e. V. und dem Deutschen Hochschulverband*.
www.hochschulverband.de/fileadmin/redaktion/download/pdf/pm/BestPracticeThesis_Endfassung.pdf
- **Günauer, F., Krüger, A.K., Moes, J., Steidten, T. & Koepernik, C.** (Hrsg.) (2012): *GEW-Handbuch Promovieren mit Perspektive. Ein Ratgeber für DoktorandInnen*. Bielefeld: W. Bertelsmann.
www.gew.de/index.php?eID=dumpFile&t=f&f=23396&token=7094c884d3c9733d5e2a892ea4ec013d532fba8d&sdownload=&n=GEW_Handbuch_Promovieren_und_Perspektive.pdf
- **Keller, A.** (2010). *Promotionsführer für Fachhochschulabsolventen*. 10. Auflage. Berlin: Universitätsverlag der TU Berlin.
www.rund-um-die-promotion.de/app/download/7963814186/Promotionsfuehrer_Promovieren+mit+FH+Abschluss_HS+Trier.pdf?t=1476782314
- **Qualitätszirkel Promotion** (2010). *Gemeinsam die Promotion gestalten – Handlungsempfehlungen für Promovierende*.
www.qz-promotion.de/app/download/11567810224/Promotionshandbuch2014_Promovierende_dt.pdf?t=1426683967
- **Ruschhaupt, U. ; Wüst, Heidemarie.** (2003). *Als FH-Absolventin oder Absolvent promovieren - Ein Leitfaden*. (Hrsg.) Dombrowski, Eva-Maria. Beuth Technische Hochschule Berlin http://public.beuth-hochschule.de/~buero_f/puv/Leitfaden_Promo.pdf
- **UNIWiND** (2014). *Betreuung Promovierender – Empfehlungen und Good Practice für Universitäten und Betreuende*. In: UniWiND-Publikationen, Bd. 4/2014.
http://www.uniwind.org/fileadmin/user_upload/Publicationen/UniWiND_Bd4_2014_web.pdf.

Helpful links:

- www.promotionsratgeber.de/
- www.rund-um-die-promotion.de/
- www.gew.de/wissenschaft/promotion/

Literature on supervision:

- **Wadee, A., Keane, M., Dietz, T. & Hay, D.** (2010). *Effective PhD Supervision, Mentorship and Coaching*. Rozenberg Publishers Amsterdam
<https://openaccess.leidenuniv.nl/bitstream/handle/1887/38561/ASC-075287668-2854-01.pdf?sequence=2>
- **Lee, A.** (2011). *Successful Research Supervision: Advising Students Doing Research*. Routledge Chapman & Hall.
- **Beasley, N. & Taylor S.** (2005). *A Handbook for Doctoral Supervisors*. London: Routledge
- **Kamler, B. & Thompson P.** (2006). *Helping Doctoral Students Write: Pedagogies for Supervision*. London: Routledge
- **Hennig, A.** (2010). *Die Crux mit der Promotionsbetreuung - Einblicke in eine besondere Beziehung und Überlegungen zu Lösungsansätzen*. (Hrsg.) Girgensohn, Katrin. *Kompetent zum Dokortitel*. Wiesbaden: VS Verlag für Sozialwissenschaften, S. 69-82.

Appendix 6: Information sheet for doctoral candidates – legal information

At TH Köln, people are increasingly choosing to work on their academic further qualification in the form of a doctorate in cooperation with various universities. Explanations on certain, frequently-asked questions are provided below from a legal viewpoint.

Basic principle:

Doctoral candidates are regularly (also) associated with TH Köln by means of enrollment. Enrollment brings with it certain benefits, in particular:

- Possibility of using the infrastructure (e.g. refectory, University Library, Campus IT, Academic Sports Service, etc.),
- Statutory accident insurance,
- NRW Ticket,
- Use of services specially provided for doctoral candidates and
- Possibility of participating in EU mobility funding.

In addition or alternatively, it may be possible to work at TH Köln as a scientific employee via a third-party funded project and enjoy the benefits listed above thanks to this status.

Exception:

If, however, the doctoral candidate is neither enrolled at TH Köln nor employed as a scientific employee, the infrastructure at TH Köln can only (continue to) be used in exceptional cases by written agreement. The corresponding regulations are listed below.

Campus IT

People undertaking cooperative doctorates who are neither enrolled nor employed as a scientific employee at TH Köln can be registered manually to obtain a campusID in order to use IT resources. There are two ways of doing this:

1. Manual registration via a personal visit to the responsible campusID contact person. The regularly updated list of campusID contact persons for the faculties and central institutions can be accessed via the following link: https://www.th-koeln.de/hochschule/die-campusid_23800.php

A recent passport photo and confirmation from an internal contact person are required for manual registration.

2. Manual registration via the Campus IT Service Desk. The internal contact person sends a request for the manual registration of the doctoral candidate to the e-mail address: support@campus-it.th-koeln.de

The following information is required in order to perform manual registration:

- Scan of the personal ID (front and back) of the person to be registered and
- Private e-mail address
- Private telephone number
- Faculty affiliation
- Start and end date of the campusID

Access to the Campus IT (CIT) infrastructure can continue to be granted for a maximum of one year after the end of employment as a scientific employee. This is always conditional on the existence of

an objective reason (justification of why access to a particular resource continues to be necessary) and the consent of the internal project manager (usually the project manager for the third-party funded project or the professor supervising the doctoral project at TH Köln). Implementing this in the specific case only requires a brief email from the project manager to CIT Support with:

- campusID or name of the respective (former) employee
- Objective reason
- Desired end date of the campusID

University library

Former students at the university of applied sciences can continue to use the University Library free of charge as an exception if they register at one of the four campus libraries by presenting their personal ID and university of applied sciences certificate.

Doctoral candidates who are enrolled at another university of applied sciences can have a free guest card issued.

People who are not members of the university can purchase a guest user ID for a fee. However, no external access to electronic resources is possible then.

A guest MultiCa to use the library can be acquired at the Service counters at the four campus libraries. This guest card allows the refectory to be used at a guest price.

MultiCa

Guests of the university of applied sciences can be issued a guest card that allows them to use the refectory at a guest price. Only an informal application from the hosting institution (e.g. from the project manager) is needed for this. These guest cards can also be used for the University Library.

A copier function can also be approved if it is required and the internal project manager confirms this by stating a cost center with funds or WBS element. The copier costs are then posted overall and quarterly. However, this is only possible using the guest cards requested from University Administration. It is not possible to subsequently add the copier function to the University Library guest cards.

The guest card must be submitted to University Administration or, alternatively, to the hosting institution (Team 7.1) on the day the person leaves the university.

Laboratories and university spaces

If required in order to complete the doctoral project (or the project financed with third-party funds) and confirmed by the Institute Director or Dean, doctoral candidates can be granted further access to laboratories and university spaces upon application after the end of employment as a scientific employee. The possibility of using these spaces is usually restricted to the standard opening hours of the requested rooms and then involves issuing and returning keys or transponders at the corresponding location on site.

Any further issuing of keys or transponders is only taken into consideration in very rare exceptional cases, and only where required and confirmed by the Institute Director or Dean, and can be withdrawn at any time.

Assumption of travel expenses

It is possible for the project manager to assume the costs of travel, such as for conference participation to disseminate the results developed at the university of applied sciences.

A refund application including the corresponding receipts is to be submitted by the project manager. The refunding principles (particularly in accordance with the state travel expenses law) apply analogously to the standard regulations at TH Köln.

Remuneration for talks

It is possible for the project manager to assume expenses, such as for the development and presentation of conference contributions to disseminate the results developed at the university of applied sciences.

A corresponding "work contract" is to be sent by the project manager to Procurement (Team 8.3) via the HR department (Team 9.1). Hiring is undertaken by Team 8.3.

Procurements

Procurements are only possible via the project manager.

Access to the KIS system

Access to the KIS system is only possible via the project manager or doctoral candidates who have an ongoing employment relationship with TH Köln.

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