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Overview of the

iFQ Survey on the
Postgraduate Education at the
Goethe University Frankfurt

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iFQ Survey on the Postgraduate Education at
the Goethe University Frankfurt

André Lottmann

Dear doctoral students and supervisors of the Goethe University and dear readers,

In this report, we present the results of the first university-wide doctoral student survey, which was conducted in the spring of 2013 in cooperation with the Institute for Research Information and Quality Assurance (iFQ). „Are you happy?“ was the great motto of the survey. In the present summary, you will learn about the results of the survey, including how happy the Frankfurt doctoral students really are, where they still see great possibilities for improvement, how heterogeneous the problems are in the case of doctoral studies in the individual academic disciplines and much more.

In particular, the high level of participation on the part of the doctoral students pleased me. More than a fourth of all doctoral students took part in the survey, allowing insight into the situation of the doctoral students at the Goethe University in Frankfurt. For this, I would like to cordially thank you. Naturally, I would also like to thank all the supervisors who took part in the survey, therefore making it possible to see the view from the other side of the coin. Additionally, I would also like to take the opportunity to again thank the employees of the Dean's Office and the doctoral studies examination offices, whose cooperation in preparing a list of doctoral students made the survey possible in the first place, since a comprehensive registration of doctoral students over the entire university had not previously been done. Last but not least, I would like to extend my thanks to the colleagues of GRADE, FuN, the Equal Opportunities Office and the Senate Commission on Young Researchers, who creatively collaborated to create the questions.

Through the preliminary work and the survey, we have obtained for the first time very fundamental information regarding the number of doctoral

students, the composition according to faculty, age and gender as well as statements about family circumstances, the motivation for starting doctoral studies and career goals. Furthermore, for me personally, the supervisory situation at the Goethe University is especially a concern. Which forms of supervision are there? How satisfied are the doctoral students with individual aspects of their supervision? Which GRADE offerings are deemed particularly important? And how much does the reality differ from the desired extent of support?

Especially in the context of the current plagiarism debate, the quality assurance of doctoral studies has increasingly come into the view of the public and universities. I am convinced that a good culture of quality can only be associated with excellent supervision and satisfactory conditions for doctoral students. The survey results will be a big help for the university and GRADE in continuously developing the general conditions of doctoral studies as a starting basis for high quality, good supervision and happy doctoral students. Because only when we know the needs of the doctoral students and the supervisors can we accordingly adapt the structures and offerings of the Goethe University. What we can learn from the survey and how we deal with it are matters that we would like to discuss with you in the future.

I hope you will now enjoy reading the report!

Yours sincerely

Prof. Dr. Enrico Schleiff
Vice President of
Goethe University



Dear PhD students, dear supervisors,
dear colleagues and friends of the university,

The year 2014 represents the fifth year since GRADE was established – reason enough to make a small interim appraisal. The university-wide survey „Are You Happy?“ has successfully been completed and its results are published with this report. These results have provided Frankfurt with valuable information about „the great unknown questions“ of academia and doctoral studies. Particularly surprising was the great number of doctoral students at the Goethe University (over 6000) – which shows that the efforts to optimize postgraduate education must remain on the agenda.

GRADE has established itself both nationally and internationally as one of the largest graduate academies in the German university environment. The tripartite structure with the central Service Unit, GRADE Centres and doctoral studies programmes has proven itself so effective that in the meantime, several institutions from both within Germany and abroad have consulted with GRADE, and some have already imitated our structure.

Because the number of international doctoral students at Goethe University is far above the national average (14%), GRADE has consistently tailored its offerings to meet the needs of international students – the proportion of doctoral students from abroad is nearly 30% and continuously increasing.

By now, 70% of GRADE members come from the humanities and social sciences. The merging of the Frankfurt Graduate School (FGS) and the Goethe Graduate Academy (GRADE) can only be seen as successful and contributes to joining the different research cultures together in the context of sustainable research.

GRADE is not only concerned with educating doctoral students to become excellent researchers, but also with developing their ability to imbed

their work into the academic and social framework. The GRADE Services have become widely known. Especially the Training Programme, with more than 100 events per year, has been rated very positively by supervisors and doctoral students alike.

Paying attention to strict quality requirements is indispensable for maintaining the sustainability of the university and the reputation of its graduates. GRADE has always had its standards regularly assessed by an academic advisory board, not just since the reports about doctorates being earned through dishonest means. The concept, target agreement and budget of the Academy are continuously checked and adjusted as necessary to guarantee reliable quality control.

The brief review should not, however, prevent us from looking forward. Even the proven components of GRADE must not be set in routine, but must instead remain lively and compatible in a dynamic academic environment. Therefore, we will develop a future concept on the basis of the present study which will appropriately address the different forms of doctoral studies and the diversity of the doctoral students. And finally, we hope that the publication of this study will provide those who are not yet familiar with GRADE with an understanding of our Academy.

Prof. Dr. Dr. h.c.
Volker Mosbrugger
Director of GRADE



PD Dr.
Heike Zimmermann-Timm
Managing Director of
GRADE



This publication provides an overview of the survey that the 'Institute for Research Information and Quality Assurance' (iFQ; Institut für Forschungsinformation und Qualitätssicherung) conducted for the Goethe University Frankfurt and the results of the survey that were provided to the university in July 2013¹. This overview was commissioned by the Goethe University Frankfurt. Like any overview, the current text gains its value through its concise language and content assessment. The author notes, however, that the empirical basis was not changed or supplemented in any way. The entire overview is based on the results of the survey conducted by the iFQ.

1 Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013.

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1 Introduction

The doctorate is one, and perhaps even *the* greatest, unknown aspect of the German system of higher education. So already the simple question of how many people are completing their doctoral studies at German institutes of higher education cannot be answered with certainty¹. An improvement in the available “information about the qualification process of young researchers, including the drop-out rates and completion rates as well as process data regarding the student to faculty ratio and the quality of the supervision”² has in the meantime even been called for by the Bundestag; the federal German government has reacted to this within the framework of the “Bundesberichts Wissenschaftlicher Nachwuchs” (Government Report on Young Researchers). However, reliable data are currently available solely for completed doctoral degrees. Despite a few empirical individual studies³, we are mostly in the dark as to how these doctoral degrees come about and therefore what happens in the doctoral study process. This is understandable considering the diverse difficulties involved in assessment⁴, but it remains problematic against the background of the profound reform efforts in

the last three decades – based on the political and academic debate about the adaptability of the Anglo-American *graduate schools* in the 1980s and later further stimulated by the Bologna Process for the Creation of a European Higher Education Area and the Excellence Initiative of the federal German government and the individual German states. As a result, numerous new ways of qualifying doctoral students were adopted under the term “structured doctoral studies”, without any reliable statements able to be made about the effects and side effects of these innovations.

The slow, but continuously advancing discussion about extending the right to award doctorate degrees to universities of applied science that are strong in research or non-university research institutes clearly shows that the diversification of the German doctoral system is in no way complete. At the latest, the plagiarism cases that have been discussed in the general public have concurrently raised awareness that not every model, not every professional standard, not every supervisory relationship, not every doctoral project, not every funding situation, and so on, leads in the same way to the completion of quality-oriented doctoral studies. At the very least, one is forced to presume that upon closer inspection systematic differences and possibly also differences in qualitative minimum levels in the German doctoral system would be discernable. A more precise analysis of the advantages and disadvantages of various doctoral study models on the basis of comparable information about the doctoral students is thus strongly recommended. Corresponding motivational examples of such analyses can be found, for example, in measures taken in Baden-Württemberg⁵ or within the frame-

- 1 For discussion, see Konsortium Bundesbericht Wissenschaftlicher Nachwuchs: Bundesbericht Wissenschaftlicher Nachwuchs 2013. Statistische Daten und Forschungsbefunde zu Promovierenden und Promovierten in Deutschland. Bielefeld 2013. P. 219/220. On the internet: http://www.buwin.de/site/assets/files/1002/6004283_web_verlinkt.pdf (30.11.2013).
- 2 German Bundestag (17th legislative period): Exzellente Perspektiven für den wissenschaftlichen Nachwuchs. Resolution, accepted on 28.06.2013 (Printed Matter 17/9396). P. 1/2. On the internet: <http://dip21.bundestag.de/dip21/btd/17/093/1709396.pdf> (16.07.2013)
- 3 For a treatment of the state of research, compare with Kalle Hauss, Marc Kaulisch, Manuela Zinnbauer, Jakob Tesch, Anna Fräßdorf, Sybille Hinze, Stefan Hornbostel: Promovierende im Profil. Wege, Strukturen und Rahmenbedingungen von Promotionen in Deutschland. Ergebnisse aus dem ProFile-Promovierendenpanel. iFQ-Working Paper No. 13. Berlin 2012. P. 12/13. On the internet: http://www.forschungsinform.de/Publikationen/Download/working_paper_13_2012.pdf (30.11.2013).
- 4 See Stefan Hornbostel (Ed.): Wer promoviert in Deutschland? Machbarkeitsstudie zur Doktorandenerfassung und Qualitätssicherung von Promotionen an deutschen Hochschulen. iFQ-Working Paper No. 14. Berlin 2012. On the internet: http://www.forschungsinform.de/Publikationen/Download/working_paper_14_2012.pdf (30.11.2013).

- 5 For the current discussion about an amendment to the State Law on Universities and Colleges in Baden-Württemberg (Landeshochschulgesetz) that considers new quality assurance measures for doctoral studies, see in the internet: <http://beteiligungportal.baden-wuerttemberg.de/index.php?id=2924> (30.11.2013), and in particular: Ministerium für Wissenschaft, Forschung und Kunst des Landes Baden-Württemberg: Qualitätssicherung im Promotionsverfahren: Baden-Württemberg geht voran. Stuttgart, 2013. On the internet: <http://beteiligungportal.baden-wuerttemberg.de/fileadmin/redaktion/beteiligungportal/MWK/Dokumente/Eckpunkte.pdf> (30.11.2013).

work of the Core Data Set Research currently in progress as recommended by the German Council of Science and Humanities.⁶

That some institutions of higher learning have already recognized this situation themselves and taken it seriously is demonstrated by their efforts to learn more, at least with respect to the doctoral students in their own faculties. This is also true of the underlying survey described in the following text, which was conducted by the “Institut für Forschungsinformation und Qualitätssicherung” (iFQ; Institute for Research Information and Quality Assurance) at the Goethe University Frankfurt (shortened to “Goethe University” hereafter). The survey aimed at

- recording the fundamental characteristics of the doctoral students at Goethe University,
- collecting assessments from the doctoral students and the doctoral supervisors regarding the conditions of PhD studies in different contexts at Goethe University,
- gaining information about the quality of the doctoral study process, especially about the supervision as well as
- determining the importance of the Goethe Graduate Academy (GRADE), which was founded in 2009 as an interdisciplinary institution for doctoral studies and has been gradually expanding since its founding.

For this purpose, in April and May 2013, the 6,631 doctoral students identified as well as 1,637 university professors and lecturers from all 16 faculties of the Goethe University were surveyed. The response rate of the survey amounted to 26% of the doctoral students and 28% of the university professors and lecturers (see Chapter 2).

The results paint a complex and differentiated picture of the characteristics and quality of the postgraduate education at Goethe University in general and GRADE in particular.

6 Cf. Wissenschaftsrat: Empfehlungen zu einem Kerndatensatz Forschung. Printed Matter 2855-13. Berlin 2013. On the internet: <http://www.wissenschaftsrat.de/download/archiv/2855-13.pdf> (30.11.2013)

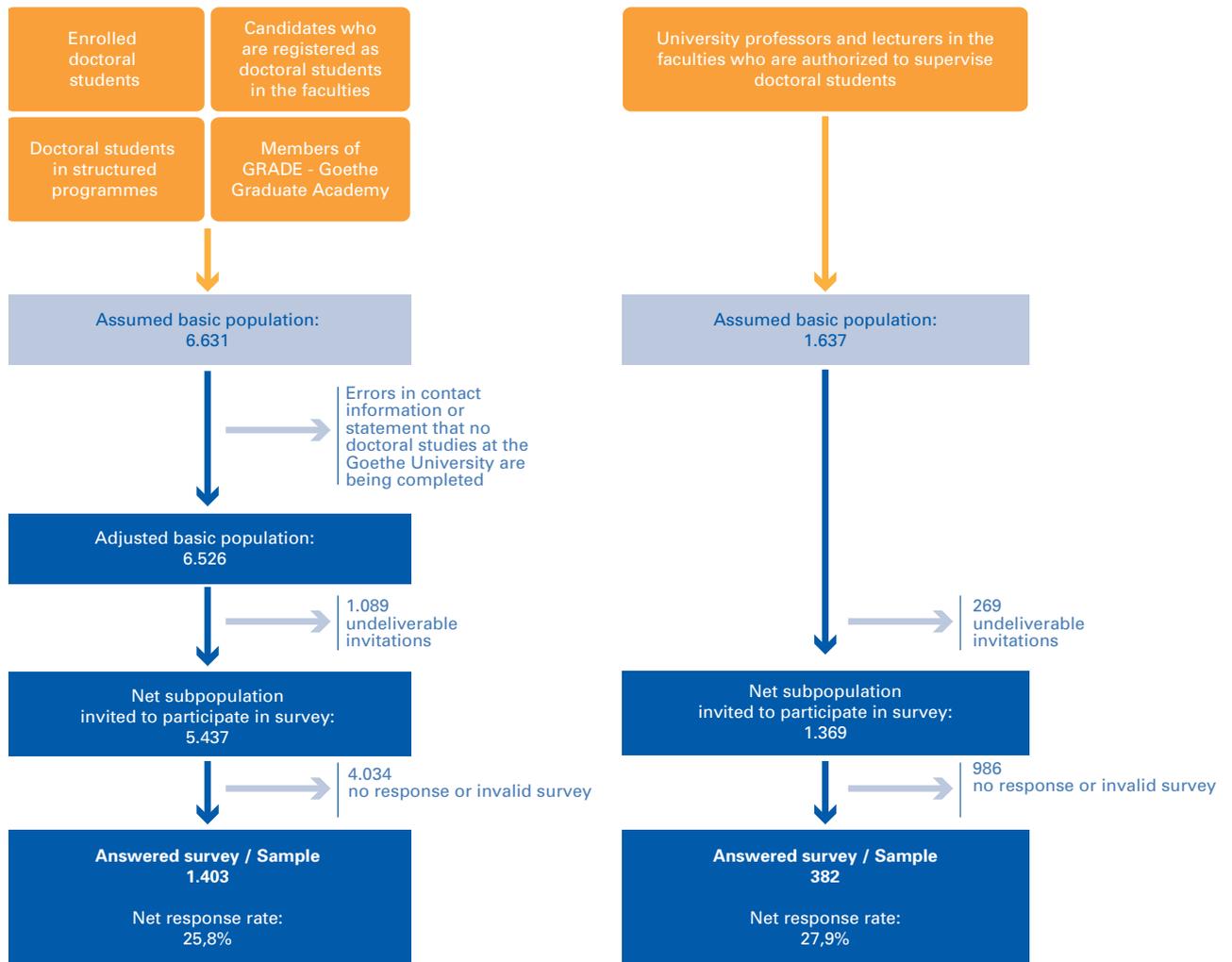


Figure 1: Diagram of the sequence from the basic population to the sample in the doctoral student survey (left) and the supervisor survey (right).

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: *Promovierendenbefragung an der Goethe-Universität Frankfurt* (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Depiction by the current work's author.

2 Methods and Information about the Interpretation

2.1 Methods

The survey about the postgraduate education at Goethe University consists of two closed surveys, both conducted between 9 April and 20 May 2013 (see Chapter 6). One survey was intended for doctoral students, the other for the doctoral study supervisors. The data for both addressed groups were compiled on the basis of different sources at Goethe University.

Acquiring information about the **doctoral students** proved to be difficult – not only at the Goethe University – because enrolment, registration and/or matriculation are not clearly regulated, do not always occur at the actual time that the doctoral studies begin and generally are not done at a consistent place⁷. Hence with respect to determining the basic population for the doctoral student survey, various sources were utilized. However, these sources, even in their entirety, do not guarantee completeness. The recorded data includes information regarding

- the people registered for doctoral studies in the individual faculties,
- matriculated doctoral students,
- doctoral students who are part of structured programmes and
- doctoral students who are concurrently members of GRADE.

These sources were combined and adjusted for any duplicates; furthermore, any missing contact information was supplemented based on research.

Any person who is authorized in the individual faculties to supervise doctoral students was designated as a **supervisor**. Missing contact information was supplemented or completed wherever possible.

2.2 Representativeness

For the **doctoral student survey**, 6,631 doctoral students were identified (those students assumed as representing the basic population). This sample was adjusted to remove any people whose contact data were faulty or people who mentioned at the beginning of the survey that they were not completing doctoral studies at the Goethe University. In the end, 5,437 doctoral students (the net subpopulation after the deductions had been made) were all invited to complete the survey. Ultimately, 1,403 doctoral students completed the survey to an evaluable extent (sample), so that the net response rate is 25.8% (see Figure 1). This response is very positive compared to other surveys conducted with doctoral students.⁸ The question of distortions resulting from participants possibly giving other answers as those who did not respond (*non-response bias*) cannot be answered with absolute certainty. Nevertheless, with a view of central characteristics like professional differentiations and the gender ratio, it is possible to check whether there is an over- or underrepresentation of a particular group compared to the basic population. With respect to the professional differentiation, it is apparent that Medical Science is underrepresented (basic population: 24.4%, sample: 15.9%) and Biomedicine is slightly overrepresented (basic population: 9.1%, sample: 12.8%). For all the other faculties,

7 Regarding this problem, also see: Stefan Hornbostel (Ed.): Wer promoviert in Deutschland? Machbarkeitsstudie zur Doktorandenerfassung und Qualitätssicherung von Promotionen an deutschen Hochschulen. iFQ-Working Paper No. 14. Berlin 2012. On the internet: http://www.forschungsinfo.de/Publikationen/Download/working_paper_14_2012.pdf (30.11.2013).

8 See, for example, Kalle Hauss, Marc Kaulisch, Manuela Zinnbauer, Jakob Tesch, Anna Fräßdorf, Sybille Hinze, Stefan Hornbostel: Promovierende im Profil. Wege, Strukturen und Rahmenbedingungen von Promotionen in Deutschland. Ergebnisse aus dem ProFile-Promovierendenpanel. iFQ-Working Paper No. 13. Berlin 2012. S. 54–57. On the internet: http://www.forschungsinfo.de/Publikationen/Download/working_paper_13_2012.pdf (30.11.2013).

there are no noticeable differences. Moreover, the two differences mentioned do not lead to any distortions with respect to the comparison of the natural and life sciences on one hand and the social sciences and humanities on the other hand. As to the gender ratio, there is no general *non-response bias* that can be identified. Having said that, there are great distortions if the ratio of women to men is examined on the level of the subject areas. In the Social Sciences, Educational Sciences, Protestant Theology, Catholic Theology and Earth Sciences, there were differences of more than five percentage points, regarding the proportions in the general population and in the sample. It is assumed, however, that these distortions will not fundamentally impact the interpretation of the data.

In the **supervisor survey**, a total of 1,637 people were identified as potential respondents (assumed as representing the basic population). A total of 1,368 supervisors were invited to complete the survey (the net population after deductions had been made); the survey was undeliverable to the remaining people. Ultimately, 382 evaluable responses were submitted (sample), representing a net response rate of 27.9% (see Figure 1). This response is low compared to the responses from other surveys.⁹ Examining for a possible *non-response bias* leads to similar results as in the doctoral student survey. In the faculties, Medical Sciences is underrepresented, whereas Biological Sciences is overrepresented. Differentiating by profession shows that full professors are overrepresented in comparison to adjunct professors (*Privatdozent*) and so on. This does not necessarily have to lead to distortions of the results and could be attributed to the fact that in the other professions, the proportion of those who

are entitled to supervise and confer doctorates but do not actually supervise doctoral students is greater than the proportion in the professorate.

2.3 Information Regarding the Interpretation of the Results

In light of the remarks on representativeness, it is assumed that the iFQ survey makes it altogether possible to gather strong evidence about the postgraduate education at Goethe University. Nonetheless, the following points regarding the interpretation of the data should be particularly kept in mind:

- The postgraduate education is – not only at the Goethe University – marked by strong disciplinary differences. For this reason, statements are made on the basis of mean values only in rare cases. Furthermore, the different cultures of the academic disciplines should always be considered when interpreting the results.
- In particular differentiations or the combination of various differentiating features, the sample size can sometimes reach a critical level. This is particularly true for differentiations according to the university faculties and for the supervisor survey. The distribution of the doctoral students and supervisors in each sample according to faculty and other criteria is illustrated in Table 1 and Table 2, respectively. The distributions provide an overview of the levels of differentiation at which critical sample sizes, namely fewer than 20, have already been fundamentally reached. Moreover, the sample sizes can also fall below a critical limit with respect to individual survey aspects. As a matter of principle, the present summary does not contain any statements that are based on a group with such a subcritical sample size.

9 See, for example, Susan Böhmer, Jörg Neufeld, Sybille Hinze, Christian Klode, Stefan Hornbostel: Wissenschaftler-Befragung 2010: Forschungsbedingungen von Professorinnen und Professoren an deutschen Universitäten. iFQ-Working Paper No. 8. Berlin 2011. S. 21–30. On the internet: http://www.forschungsinfo.de/Publikationen/Download/working_paper_8_2010.pdf (30.11.2013).

The following text first describes some solely descriptive characteristics of the doctoral students (Section 3.1) and their supervisors (Section 3.2) indicated by the respective samples. After that, the results of the iFQ Survey are summarized under four central categories: individual supervision (Section 3.3), supervision in structured programmes (Section 3.4), instruments of structured support (Section 3.5) and the importance of GRADE (Section 3.6).

3.1 Personal and General Characteristics of the Doctoral Students in the Sample

An important characteristic of the doctoral students who participated in the survey is first of all their **distribution among the 16 faculties** which the Goethe University has at its disposal. Medical Sciences, with 223 doctoral students, represents the largest group, followed by Biological Sciences (179) and Biochemistry, Chemistry and Pharmacy (149). Fewer than 60 doctoral students are found in the faculties of Educational Sciences, Psychology and Sport Science, Protestant and Catholic Theology, New Philologies, Earth Sciences / Geography as well as Computer Science and Mathematics. Due to the overall impact of disciplinary influences on doctoral studies, the distribution among the faculties is also of great importance in understanding the remaining characteristics. This is also shown in Table 1, which in addition to indicating the distribution of the academic fields, already provides a breakdown of some of the subsequently explained characteristics. In doing so, the disciplinary differences already become evident.

At the Goethe University, the **proportion of women** among the doctoral students is 56%. The proportion strongly varied, however, according to the academic faculties. In Educational Sciences, Psychology and in New Philologies, the proportion

exceeded 70%, whereas in Business and Economics, in Computer Science and Mathematics as well as in Physics, the proportion was fewer than 30%.

Approximately half of all doctoral students at the Goethe University are 29 years old and younger. The largest group, with 23%, consists of students who are 28 or 29 years old. Great differences can be seen here with respect to subject area. The doctoral students in the Earth Sciences / Geography, Physics and Biochemistry, Chemistry and Pharmacy are comparatively young (more than 70% are younger than 30 years old). The **age structure** of the doctoral students deviates in the other direction in Educational Sciences, Protestant Theology, Catholic Theology, Philosophy and History as well as Language and Cultural Studies (more than 70% are 30 years old and older). Every third Theology doctoral student and every fifth Language and Cultural Studies doctoral student is even older than 40 years old.

Of the doctoral students, 22% have a **migration background**¹⁰ but already have been living for a long time in Germany. Those who have **directly come from abroad for doctoral studies** at the Goethe University account for 12% of the doctoral students. In Business and Economics, the group of doctoral students with a migration background and those who have directly come from abroad represent in total slightly more than half of the doctoral students, whereas they represent less than 30 percent of the doctoral students in the faculties of Psychology and Sport Science, Earth Sciences / Geography (only those with an orientation in the natural, biological and life sciences), Physics and Medical Science.

Of the doctoral students, 17% have at least one **child**. However, here too the proportion varies under 10% in Business and Economics, Physics and Biochemistry, Chemistry and Pharmacy. In

¹⁰ A migration background was assumed for respondents when at least one parent was born abroad, the native language or the dominant language used by family or friends is not German and the doctoral students have already lived a long time in Germany.

Table 1: Distribution of the doctoral students at the Goethe University in the sample according to academic faculties and according to additional characteristics for each faculty.

Comments: Fields with a grey background are based on very small sample sizes (n < 20). They are only of very limited suitability for direct comparative analyses (cf. Chapter 2).

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

*) The two faculties 'Psychology and Sport Science' and 'Earth Sciences / Geography' were further differentiated according to disciplinary cultures in order to achieve a better differentiation. The basis for this was the estimation of the people surveyed of whether their field should be assigned rather in 'Social Sciences and Humanities' (SSH) or in 'Biological and Natural Sciences'(BNS).

Faculty of the Goethe University	Number of Doctoral Students in the Sample According to the Respective Faculties	Number of Doctoral Students in the Sample According to the Respective Faculties in Per Cent	Number of Doctoral Students in the Respective Faculties According to Certain Characteristics (Each in Per Cent)							
			Female	With a child	Aged 30 years and older	Financing through a position as a research associate	Membership in a structured doctoral studies programme	Interest in academic research is an important/very important reason for starting doctoral studies	Improving career opportunities is an important/very important reason for starting doctoral studies.	Goal is to pursue an academic career
01 Law	84	6.0	45.1	18.6	47.2	24.6	13.3	68.4	52.6	20.3
02 Business and Economics	90	6.5	28.7	8.3	34.7	60.0	50.7	77.8	60.5	27.7
03 Social Sciences	108	7.8	61.5	20.9	66.7	34.7	46.0	92.9	34.7	34.7
04 Educational Sciences	59	4.2	75.9	23.4	75.0	51.2	18.2	89.5	29.8	26.3
05 Psychology and Sport Science – (SSH) *)	28	2.0	75.0	20.0	37.5	81.0	7.7	64.3	35.7	25.0
05 Psychology and Sport Science – (BNS) *)	31	2.2	77.4	13.8	30.0	66.7	13.3	100.0	32.3	45.2
06+07 Protestant and Catholic Theology	25	1.8	50.0	31.8	77.3	33.3	33.3	86.4	50.0	25.0
08 Philosophy & History	93	6.7	41.6	31.9	74.0	15.5	50.6	93.8	38.8	30.2
09 Language and Cultural Studies	104	7.5	66.3	26.4	77.9	27.4	16.8	90.8	26.6	42.9
10 New Philologies	52	3.7	72.6	20.0	65.0	32.3	6.4	93.6	42.2	43.8
11 Earth Sciences / Geography (SSH. *)	12	0.9	58.3	28.6	25.0	80.0	0.0	55.6	33.3	22.2
11 Earth Sciences / Geography (BNS*)	42	3.0	57.5	17.1	36.1	83.3	11.4	76.9	46.2	38.5
12 Computer Science and Mathematics	54	3.9	19.2	15.2	44.7	77.3	24.4	90.0	34.0	28.0
13 Physics	60	4.3	22.8	6.0	26.0	37.2	59.6	73.7	58.9	22.8
14 Biochemistry, Chemistry & Pharmacy	149	10.7	58.6	4.7	26.8	67.0	45.2	80.7	76.3	21.4
15 Biological Sciences	179	12.9	58.2	14.3	46.6	57.4	28.7	81.0	66.7	32.3
16 Medical Science	223	16.0	62.7	16.5	41.3	23.8	25.5	42.4	64.1	13.3
All faculties	1.393	100.0	55.0	16.8	48.8	46.3	30.8	77.0	52.1	27.7

comparison, over 30% of the doctoral students in both theologies and in the Faculty for Philosophy and History are already a mother or a father. This indicates that being a parent is strongly related to the age structure in each respective discipline.

The majority (46%) are completing doctoral studies in the course of employment as a research assistant, with somewhat more of these positions connected to a university budget as opposed to third-party funding. Half as many doctoral students (23%) finance their doctoral studies through a scholarship or stipend. Other **funding sources** mentioned include employment outside the university (14%) or private funds (12%). The proportion of doctorates funded by positions is particularly high (more than 70%) in the Faculty of Psychology and Sport Science, in Earth Sciences / Geography as well as in Computer Science and Mathematics. In contrast, the proportion of doctorates funded by positions is particularly low (less than 25%) in Philosophy and History, in Law and in Medical Science. The doctoral students in Law fund their doctoral studies much more frequently through employment outside the university (32%), and the doctoral students in the Faculty of Philosophy and History fund their studies more frequently through scholarships and stipends (41%). In Medical Science, private funding is often referenced (47%); this is probably because in Medical Science, the doctoral studies are for the most part completed parallel to undergraduate studies, and therefore the funding source for the undergraduate studies is possibly mentioned.

Almost every third doctoral student is a **member in a structured doctoral studies programme**.¹¹ In this respect, the male doctoral students are slightly more represented than the female doctoral students. The proportion of the programme memberships are comparatively high (more than 50%) in Business and Economics, in Philosophy

and History as well as in Physics. The proportion is particularly low (less than 15%) in Law, Psychology and Sport Science, in Earth Sciences / Geography and in the New Philologies.

The most important **motivation to start doctoral studies** is the interest in academic research. This is rated as important or very important by 77%. In some of the faculties, however, the interest in a specific topic predominates. In comparison, only the doctoral students in the Faculty of Medical Science see improving their career opportunities as an especially important motivation for their doctoral studies. Career opportunities additionally play a role in Business and Economics, in Biochemistry, Chemistry and Pharmacy as well as in the Biological Sciences; here more than 60% consider a potential improvement through doctoral studies to be an important or very important reason. It seems clearly different in the faculties for social sciences and humanities, with the exception of the already mentioned faculties of Business and Economics, Protestant Theology and Catholic Theology and the New Philologies; here less than 40% of the doctoral students mention better career prospects as a motivating factor.

The question of whether an academic career is sought is answered positively by 28% of the doctoral students; 34% see a future career outside of academia; and 39% are unsure. Among the doctoral students in Medical Science, the intent to pursue an academic career is the least pronounced (13%); they are subsequently followed by the doctoral students in Law (20%). The goal of having an academic career is particularly pronounced in the natural science part of the Faculty of Psychology and Sport Science (45%), in New Philologies (44%) and in Language and Cultural Studies (43%).

On average, the doctoral students strive to complete their doctoral studies within four years (since the start of the doctoral studies). In Law, Psychology and Sport Science as well as in Physics, the **duration of doctoral studies** is expected to be at least half a year shorter. Doctoral students

11 The term 'structured doctoral studies programme' was defined as broadly as possible in the survey. The term includes among others: post graduate programmes, international doctoral studies programmes, post graduate programmes of a centre of excellence, graduate schools in cooperation with research institutions outside the university and similar programmes. The exact distribution is outlined in Section 3.4.

in the Social Sciences, Educational Sciences and Language and Cultural Studies, however, assume that about four and a half years are needed.

In the survey, information was gathered about doctoral students at various **times in their doctoral phase**. In this respect, the group of those who have already been completing doctoral studies for at least four years is the largest, with 27%. They have therefore already exceeded the average expected overall duration of doctoral studies. In the Social Sciences, Philosophy and History, Language and Cultural Studies, New Philologies, as well as in Medical Studies, 30% have even already been completing their doctoral studies for at least four years. Doctoral students who have started their doctoral studies less than a year ago account for 14% on average from all the subject areas.

3.2 Personal and General Characteristics of the Supervisors in the Sample

The following section presents – analogous to the previous one – some purely descriptive characteristics of the supervisors at the Goethe University who took part in the survey. The supervisory personnel – as at other universities – is composed of various **occupational groups** (to simplify, in the following text they will be called ‘university professors and lecturers’). Thus, from the total 382 supervisors in the sample, 58% are full professors, 30% are adjunct professors (*Privatdozent*), 5% are emeritus professors, 3% are associate professors (*Juniorprofessor*) and a further 3% are young researchers. There are no major gender differences in the distribution among the occupational groups.

As with the doctoral students, in regard to the supervising professors and lecturers, considering the **different allocation of subject areas** is of central importance. As a starting point, the overview in Table 2 is therefore similarly oriented towards the different faculties of the Goethe University. It shows that by far, most supervisors in the sample originate from Medical Science, whereas from Law, Educational Sciences, Psychology and

Sport Science, Protestant and Catholic Theology, Philosophy and History and the Earth Sciences / Geography, fewer than 20 supervisors from each faculty took part in the survey.

Over all the faculties together, the **proportion of women** is 21%. The proportion is nonetheless at least double as high in the Social Sciences and in New Philologies. At the same time, the proportion is under 10% in Business and Economics and in Protestant and Catholic Theology. From Physics as well as in Biochemistry, Chemistry and Pharmacy, only men participated in the survey.

With respect to **age structure**, the group of those less than 50 years of age is minimally larger than the group of those who are older than 50 years of age. Yet here there are also great differences between the subject areas. For example, in Educational Sciences, almost seven from ten of the supervising professors and lecturers are 50 years and older, in Protestant and Catholic Theology and in Philosophy and History there are even eight from ten. In contrast, the situation in Business and Economics, Psychology and Sport Science as well as in Earth Sciences / Geography is the opposite; in the first two of these faculties, even every fifth supervisor is younger than 40 years of age. The age structure also depends on the gender distribution: in this respect, the female supervisors are generally younger as their male colleagues.

Among the supervisors, 12% can be presumed to have a **migration background**. Nevertheless, there are faculties such as Law, Business and Economics, Educational Sciences, Psychology and Sport Science as well as Protestant and Catholic Theology, in which no supervisors with a migration background could be identified. On the other hand, in Language and Cultural Studies, in New Philologies and in Computer Science and Mathematics, at least every fifth supervisor has a migration background.

Less than half of the university professors and lecturers perform their supervision within the **framework of a structured doctoral programme** or are otherwise active in one. However, the involvement of those in Protestant and Catholic

Table 2: Sample distribution of the supervisors at Goethe University according to faculty and additional characteristics for each faculty.

Comments: When a differentiation is made according to the faculty, the sample numbers almost always reach a critical level ($n < 20$), so that comparative interpretations should only be done with caution (see Chapter 2).

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

Faculty of the Goethe University	Number of Supervisors in the Sample According to the Respective Faculties	Number of Supervisors in the Sample According to the Respective Faculties in Per Cent	Number of Supervisors in the Respective Faculties According to Certain Characteristics					
			Female (in per cent)	Aged 50 years and older (in per cent)	Participation in a structured doctoral programme (in per cent)	Weekly expenditure of time for supervising doctoral students (hours on average)	Weekly expenditure of time for research (hours on average)	Supervision of internal doctoral students (number on average)
01 Law	8	2.1	25.0	50.0	25.0	3.6	16.0	7.4
02 Business and Economics	22	5.8	9.1	27.3	36.4	4.6	13.8	5.8
03 Social Sciences	29	7.6	44.0	48.0	41.7	2.4	14.1	4.8
04 Educational Sciences	13	3.4	38.5	69.2	30.8	3.8	13.3	5.5
05 Psychology and Sport Science	15	3.9	20.0	33.3	13.3	3.8	13.1	4.1
06+07 Protestant and Catholic Theology	11	2.9	9.1	81.8	81.8	3.6	12.6	4.9
08 Philosophy & History	11	2.9	20.0	80.0	63.6	4.8	12.7	7.2
09 Language and Cultural Studies	22	5.8	26.3	55.0	60.0	3.0	11.8	5.9
10 New Philologies	22	5.8	55.6	58.8	33.3	2.8	12.3	4.5
11 Earth Sciences / Geography (SSH & BNS)	18	4.7	17.6	17.6	35.3	4.9	10.4	4,1
12 Computer Science and Mathematics	25	6.5	15.8	47.1	30.0	5.2	11.5	2.9
13 Physics	30	7.9	0.0	56.7	63.3	5.4	14.7	4.3
14 Biochemistry, Chemistry & Pharmacy	27	7.1	0.0	45.8	64.0	8.4	14.2	7.0
15 Biological Sciences	33	8.6	25.0	56.3	50.0	6.3	15.0	5.9
16 Medical Science	96	25.1	20.7	38.1	34.1	4.1	11.3	5.3
alle Fachbereiche	382	100.0	20.7	47.2	43.2	4.6	12.8	5.2

Theology, Philosophy and History, Language and Cultural Studies, Physics and Biological Sciences is noticeably higher (more than 60%). The involvement is particularly low, in comparison, in Law, Psychology and Sport Science (less than 30%).

For the supervision of doctoral students, the university professors and lecturers devote on average 4.6 hours a week, according to their own estimates, whereas the social science and humanities subject areas tend to report higher estimates and the natural and life sciences tend to report lower estimates. Almost three times as much **time** across the subject areas is devoted to research (12.8 hours per week). Also more time is devoted for tasks in teaching (8.4 hours per week) and administration (4.7 hours per week) than for supervising doctoral students. It is striking that the female supervisors spend on average about an hour more than their male colleagues on supervising doctoral students. This also applies to the teaching tasks as well. For this reason, the time spent by the female university professors and lecturers on research is almost three hours less than the time spent by the male university professors and lecturers.

On average, each supervisor supervises five doctoral students, whose dissertation topic fits the respective faculty regarding content (internal doctoral students). The **number of doctoral students supervised** varies from 2.9 in Computer Science and Mathematics to 7.4 in Law. Any relevant differences between the social sciences and the humanities on one hand and the natural and biological sciences on the other hand could not be determined. Yet there were some individual cases in some subject areas with an above-average number of doctoral students. In Medical Science, for example, there was a case of a supervisor who supervised 35 internal doctoral students. In addition, half of the supervisors also supervise doctoral students, whose dissertation topics do not thematically fit the respective faculty or even students who are from outside the Goethe University (external doctoral students). This is more frequently the case in the social sciences and the humanities, but also occurs in the bio-

logical sciences. In all faculties, the supervision of more than five external doctoral students is, however, the exception.

3.3 Individual Supervision

Of the doctoral students who participated in the survey, approximately 30% are completing their doctoral studies within the framework of a structured doctoral programme at the Goethe University (see Section 3.4). The majority are therefore still completing their doctoral studies under rather traditional conditions in the context of individual supervision (referred to as 'individual doctoral studies' in the following text). It is typical for these students to be **supervised** by only one supervisor. This applies to almost half of all individual doctoral studies, whereas in structured programmes, supervision by two people is most common (37%). In the social sciences and the humanities, particularly in Law and in Protestant and Catholic Theology, the binary teacher-student relationship is more common than in the natural and biological sciences. The main supervisor is generally a professor. In comparison to structured programmes, in just under 11% of the individual doctoral studies, adjunct professors (*Privatdozent*) are the main supervisors.

According to their own statements, two out of three doctoral students **meet** with their primary supervisor once a month to once every half year. Weekly talks, with 16%, are rather the exception and occur almost entirely in the natural and biological sciences. Most meetings take place as individual conversations.

The supervisors estimate the frequency of the meetings to be noticeably higher. With regard to the internal doctoral students, they consider that almost 90% of the meetings occur on a monthly basis; weekly meetings are given for 45% of the internal doctoral students. This difference in estimation between the doctoral students and the supervisors can be interpreted as an indicator of the doctoral students implicit desire for more intensive supervision.

At the same time, it can be determined that almost half of the individual doctoral students are **satisfied or very satisfied** with their supervision, where male doctoral students are more often satisfied (51%) than female doctoral students (44%). A total of 12% are unsatisfied or very unsatisfied; here no clear gender differences can be seen. The satisfaction is comparatively higher in Computer Science and Mathematics, Physics, the natural-science-oriented Earth Sciences /

Geography as well as Biological Sciences. Conversely, Medical Science stands out in that every fifth doctoral student indicates dissatisfaction.

If one further compares the **supervision in reality and the desired supervision** (see Figure 2) with respect to the individual aspects of the supervision, the following characteristics of the individual doctoral studies at the Goethe University become apparent:

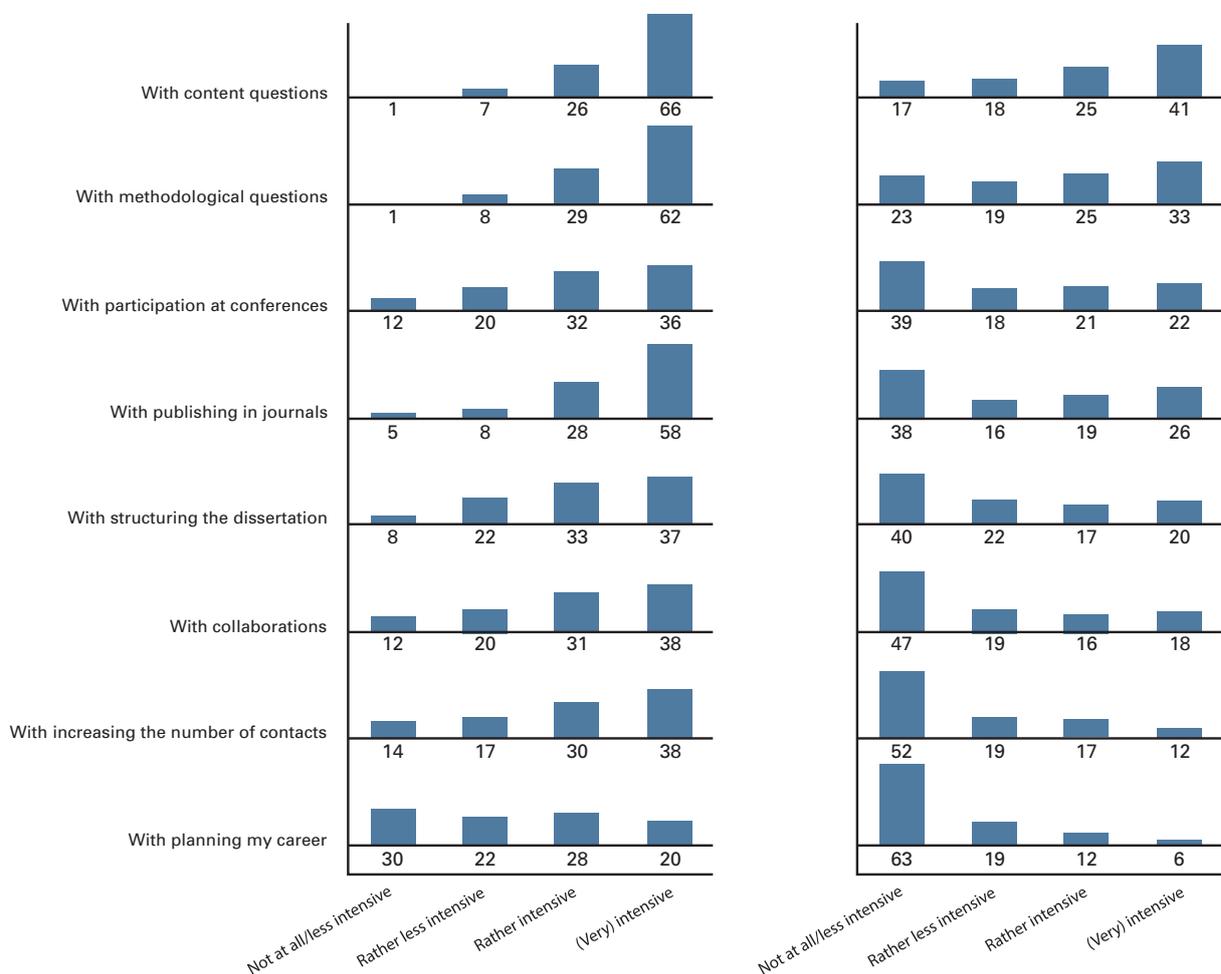


Figure 2: Intensity of support, desired (left) and reality (right), with respect to various supervision aspects for doctoral students with individual supervision at Goethe University.

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

1. Two out of three individual doctoral students desire intensive or very intensive support regarding content and methodological questions. This has the highest value of all the supervision aspects that were included on the survey. However, only 41% see a corresponding intensity of support in terms of content questions and 33% in terms of methodological questions as realized by their supervisors.
2. Furthermore, 58% of the individual doctoral students wish for (very) intensive assistance with publishing in academic journals. The group of those who already feel supported in this regard is nonetheless less than half the size (26%). Here, the difference between the supervision in reality and the desired supervision, measured on the whole in percentage points, is most obvious.
3. The fourth most important aspect – measured in terms of the desire for intensive or very intensive support – for the individual doctoral students is support with collaborations or building up contacts. In this respect, the difference between the desired support (38% regarding support with collaborations and 38% regarding building up contacts) and reality (18% and 12%, respectively) is also very pronounced.
4. Less desired is support in structuring the dissertation (37%), in participation in conferences (36%) and in the respective career planning (20%). Also, the differences from reality are less pronounced, but with differences of more than 10% each, they are still relevant.

On the whole, individual doctoral students feel that, in regard to all the aspects, they are not sufficiently supervised. If one conversely considers those aspects which are not desired or for which the students only want little support, there is no apparent overabundance of supervision.

Moreover, a clear difference according to gender can be found. Female doctoral students who are individually supervised consider themselves on average with regard to all aspects to be worse supervised than their male colleagues by almost five percentage points. Such a gender difference was not observed within the structured programmes.

The perspective of the doctoral students can be contrasted with the **self-assessment of the supervisors**. The supervisors were asked if they provide support for their doctoral students with a particular instrument or not. The frequency of the agreements provides information about which types of support overall are seen as more important and which are seen as less important. Among the supervisors who do not participate in a structured doctoral programme, four out of five encourage their doctoral students to give presentations, participate in conferences, and publish joint academic papers. At least more than 60% indicate that they promote contacts with other academics, help with career planning and participation in academic networks, encourage publications and offer activities during working time that are beneficial for the students' careers.

Somewhat fewer than four out of five supervisors see at least one **instrument which could improve their supervision**. From the suggestions given in the survey, the suggestion 'relief from other duties' found by far the most agreement. Nearly half of all supervisors see a potential for improvement in this area. In addition, just under 30% see a reduction in teaching load (just female supervisors: 38%) and bonus payments for supervisory tasks as an appropriate approach. Offers for supervisor training are considered of rather minor importance (18% overall, just female supervisors, 27%). No improvements are expected from additional means of financing (1%) and less bureaucracy (1%). In the fifth of the respondents who believe that no improvements are necessary, men are clearly overrepresented.

3.4 Supervision in Structured Programmes

The following collectively considers the 385 doctoral students of Goethe University who have taken part in the survey as members of a structured doctoral studies programme. This corresponds in total to almost a third of the doctoral students at the Goethe University. Half of them are members in a postgraduate programme (*Graduiertenkolleg* or *Promotionskolleg*). The other memberships are divided among other forms of structured doctoral studies (cf. Figure 3). As already explained in Section 3.1, the proportion of doctoral students in structured programmes strongly varies according to the faculties; this can also be seen from the overview in Table 1.

The **supervision** in the structured programmes is generally done by two people (37%). A good one-third have three or more supervisors and just under a third have only one person as a supervisor. On average, 0.5 more people are involved in the supervision as compared to the case in individual doctoral studies (cf. Section 3.5.2).

In the structured programmes as well, the **main supervisors** mostly originate from the professorate. The second largest group are the postdocs, however, who amount to almost 10%. The adjunct professors (*Privatdozent*) play a noticeably less significant role (5%) in comparison to the case in individual doctoral studies. It is noteworthy that supervisors in the framework of a structured doctoral programme are more often female (30%) than is the case for individual doctoral studies (24%).

Doctoral students **meet** with their respective main supervisors more often than is the case in individual doctoral studies. The greatest portion of doctoral students indicate that they meet monthly. Furthermore, the group of those who have weekly contact with their primary supervisor (24%) is larger than the corresponding group in individual doctoral studies (16%). The most common form of meeting is individual conversation. Nevertheless, there are other dialogue formats like meeting in a supervisory team, in

small groups or in a doctoral colloquium, which are somewhat more common than they are in individual doctoral studies.

Also in the structured doctoral programmes, the supervisors estimate the number of meetings with their doctoral students as higher than the number estimated by the doctoral students themselves. In comparison to the case in individual doctoral studies, however, the self-estimates of doctoral students and supervisors in structured programmes do not differ as noticeably from each other.

Almost half of the doctoral students indicated that they are **overall satisfied or very satisfied** with their supervisory situation. A total of 13% express dissatisfaction. Any differences according to gender are marginal. A significant difference to individual doctoral studies in this respect cannot be determined. This is generally the case also on the level of the individual faculties, inasmuch as the sample numbers allow determinations to be made.

If one compares the **supervision desired and the supervision in reality** (cf. Figure 4), one sees that for the doctoral students in structured programmes at the Goethe University– as was already the case for the individual doctoral students – that the intensity in the real supervision falls noticeably below the desired intensity with respect to all aspects covered in the survey. In doing so, the interval between what is desired and reality summed over all supervisory aspects is just as large as in the case of the individual doctoral students. Yet it is apparent that the proportion of structured programme doctoral students who desire more intensive or very intensive support is greater than the proportion among the individual doctoral students; on average over all aspects, the difference amounts to about five percentage points. Doctoral students in structured doctoral programmes therefore have a higher demand regarding supervisory assistance. At the same time, the actual intensity of supervision over all aspects is rated on average almost five percentage points higher.

Regarding the differences for the individual supervisory aspects, the situation of doctoral students in structured programmes is similar to those in individual doctoral studies:

1. The desire for support in content and methodological questions is most pronounced in the case of doctoral students in structured programmes: 65% desire (very) intensive assistance from the supervisors regarding content; in the case of methodological questions, it is 67%. However, support of this intensity is experienced by only 44 or 36%, respectively.
2. Somewhat more noticeable in the case of individual doctoral studies in structured programmes is the desire for support in publishing. Here 64% desire (very) intensive assistance; in fewer than half of the cases (29%), however, is such an intensity realized. Here amongst all supervision aspects, the difference between what is desired and actual reality is the greatest.
3. With respect to collaborations and contacts, the estimates deviate somewhat from each other, which is not the case in

individual doctoral studies. So in terms of assistance in building contacts, there is a strong difference (52% desire more intensive/very intensive support compared to the 19% who experienced intensive/very intensive support), whereas with respect to collaborations of a rather institutional nature, the desired support and the experienced support in reality (42% compared to 27%) are closer together.

4. With respect to participating in conferences, structuring the dissertation and career planning, the desire to receive (very) intensive support and the actual fulfilment of that support is not as far apart as was the case with the aforementioned aspects.

The **supervisors** see the support that they provide somewhat differently. By their own account, four-fifths of the supervisory personnel who are concurrently active in a structured doctoral programme support doctoral students with presentations and participation at conferences, with contacts to other academics, with career-promoting activities during working hours, with joint pub-

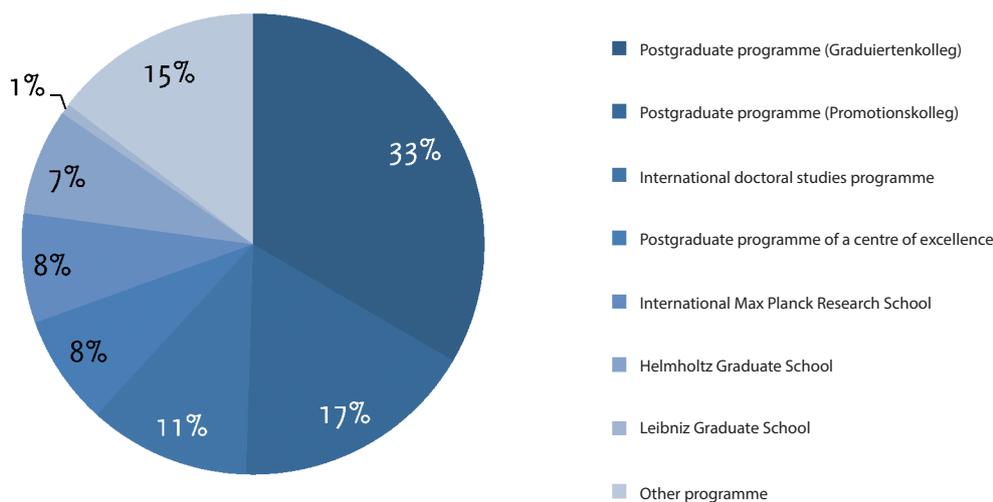


Figure 3: Distribution of the doctoral students in structured postgraduate programmes according to type (multiple answers possible).

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

lishing and participation in academic networks. In addition, more than 60% support career planning and promote international contacts.

It is striking that the supervisors who participate in a structured doctoral programme acknowledge using the instruments covered in the survey more frequently on average than those who supervise doctoral students individually. However, this does not apply to supporting publications. Joint publishing (87% vs. 81%) and even more clearly, the encouragement to publish independently (68% vs. 56%) occur more frequently in the context of individual doctoral studies than in the structured programmes of Goethe University. Against this background, it is surprising that the desire on

the part of the doctoral students in structured programmes to receive support for publishing was not substantially higher.

When asked about **opportunities for improvement**, the supervisors who are involved in a structured doctoral programme agree with the proposed instruments in a very similar fashion as those supervisors involved with individually supervised doctoral studies. Of central importance appears to be the relief from other duties (56%), reduction in the teaching load (37%) and bonus payments for supervisory tasks (31%). However, it is apparent that just fewer than 19% of the supervisors in the structured programmes see no need for improvements, while in case of

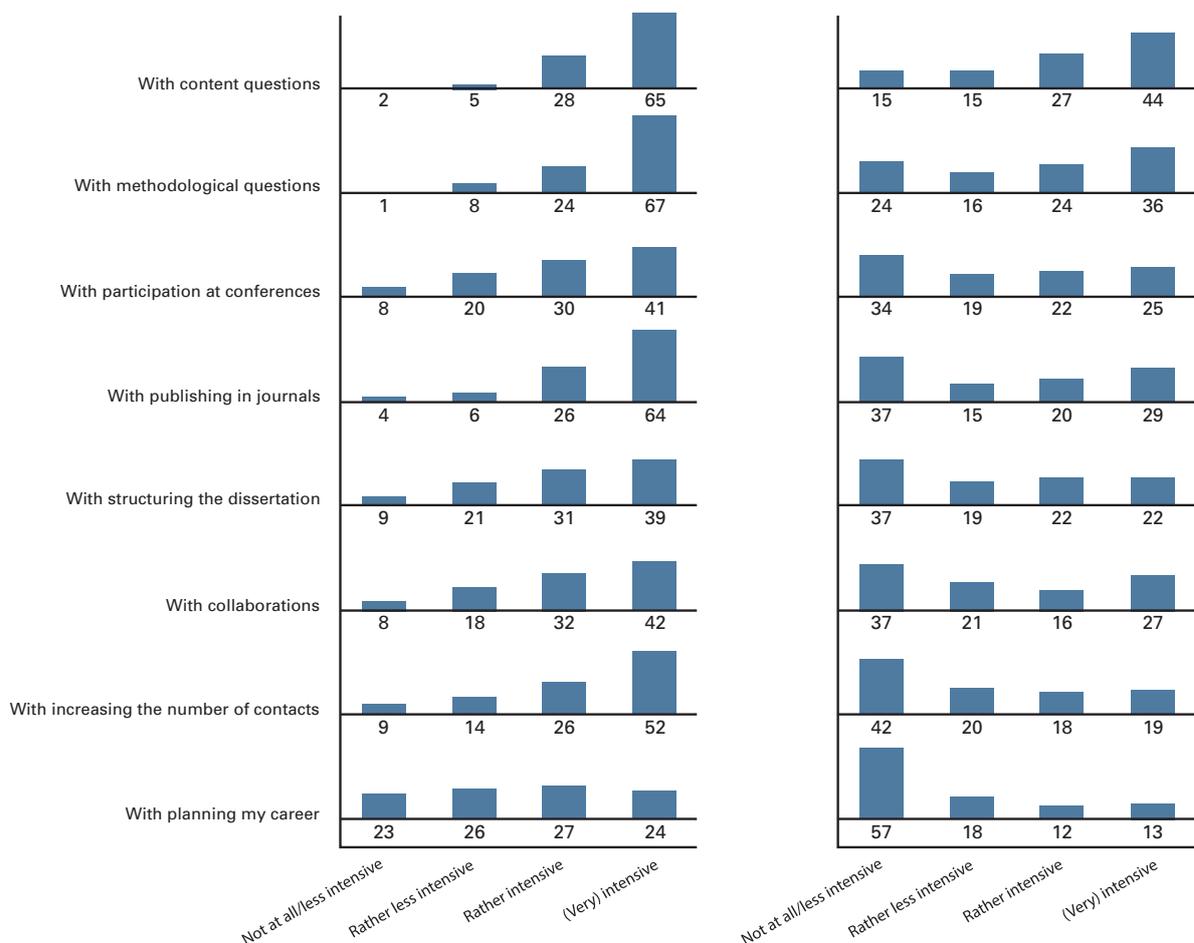


Figure 4: Intensity of support, desired (left) and reality (right), for various support aspects of doctoral students in structured programmes at Goethe University.

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

individual doctoral studies, it is 23%. This can be seen as an indication that in the structured doctoral programmes, not only are the demands on the part of the doctoral students higher, but also the desire of the supervisors to be able to appropriately respond to these demands.

3.5 Instruments of Structured Support

The following text discusses some instruments which are relevant to the doctoral student education at Goethe University, instruments which also have been repeatedly used in recent years in the context of providing more structure to doctoral studies. This applies in particular to

- the use of supervision agreements, which provide a schedule for the supervision process and increase the obligations both on the part of the doctoral students as well as on the part of the supervisory personnel, and
- the supervision of the doctoral studies process by more than one person, in which case, upon the establishment of the supervisory team, there is often a partial decoupling of personnel with respect to the later assessment.

These two instruments are the subject of the following two subsections. A third subsection deals with further structuring aspects that have become increasingly important in the context of the survey.

3.5.1 Supervision Agreement

At the Goethe University, approximately every third doctoral student has entered into a written supervision agreement. This is evident from both the statements of the doctoral students as well as those of the supervisors. As written support arrangements are required or at least recommended in some of the structured doctoral programmes at Goethe University, the rate here is correspondingly above average. A total of 45% of the doctoral students in structured programmes have a written support agreement, whereas among the doctoral students with individual supervision, only 25% have such agreements (the information from the supervisors differs slightly). Supervision agreements are more common than average in the Social Sciences (43%), in the Biological Sciences (41%) and in Educational Sciences (40%); in contrast, they are less common than the average in Law (7%) and in the Faculty for Psychology and Sport Science (10%).

The perspectives of the supervisors and the doctoral students as to how helpful the supervision agreements are differ significantly.

Of the doctoral students who have entered into such an agreement with their supervisors, 46% consider it helpful and 17% unhelpful; the rest are not sure about their assessment. As the most common reason why the supervision agreements are possibly not considered helpful, the doctoral students mention the lack of a binding nature, which results in the signed agreement not being taken seriously. Greater, reliable differences with respect to subject area or gender are not observed. Furthermore, between the doctoral students in structured programmes and those with individual supervision, there are no differences worth mentioning regarding the assessment of the benefits of supervision agreements.

Among the supervisors, only 15% generally consider the supervision agreements to be important and 38% consider them unimportant; the remaining 47% are unsure or have not dealt with such agreements so far. The reasons given for the negative attitude are an increase in administrative burden, the reduction of academic freedom or the

presumption that doctoral studies are in principle unable to be regulated. It should be noted, however, that the entire supervisory personnel was asked and not – as in the case above for the doctoral students – only those who have entered into supervision agreements themselves. Nevertheless, the relatively low relevance or attention attributed to the supervision agreements on the part of the supervisors is surprising. After all, female supervisors (31%) consider the agreements to be unimportant less often than male supervisors (41%). Moreover, those who tend to supervise their doctoral students individually are less likely to find the agreements unimportant (36%) than their colleagues in the structured programmes (42%). At the same time, the proportion of individually supervised doctoral students who have never dealt with such an agreement is greater than average.

Against this background, two conclusions can be drawn. Firstly, the supervision agreements are significantly more important for the doctoral students, since they are especially the ones who profit from the greater obligations on the part of the supervisors. Secondly – at least from the perspective of the supervisory personnel – the supervision agreements have a greater value under the relatively unregulated conditions of individual doctoral studies compared to the conditions in the structured programmes, in which, as mentioned previously, meetings take place more often.

3.5.2 Supervisory Teams

Of all the doctoral studies being completed in structured programmes at the Goethe University, 71 per cent are supervised by more than one person, mostly by two supervisors. In the case of individual doctoral studies, the supervision by one person is the most common case (see Section 3.3); but even here half still indicate that they are supervised by two, three, four or even more people. In this context, supervisory teams – quite in contrast to the previously mentioned supervisory agreements – are an integral part of the postgraduate education at the Goethe University. However, this picture is put into per-

spective when one asks if one should think of a team not just in numbers, but also in terms of the cooperation of the supervisors. In somewhat more than half of the cases, according to the statements from the doctoral students, the supervisors in the structured programmes perform their supervisory duties independently of each other, in other words, without consulting each other. In the case of individual doctoral studies, this proportion is even greater with 61%. There are great differences according to the faculties. Thus, if several university professors and lecturers are involved at all, the supervision in the social sciences and humanities is even conducted independently in 71% of the cases, whereas this is true for only half of all doctoral studies in the natural and biological sciences (individual doctoral studies and doctoral studies in the context of a structured programme).

This relativised picture of the supervisory teams was also reflected in the statements from the supervisory personnel. Two-thirds of them indicate that they carry out the supervision of their doctoral students mostly alone. Only 21% of the supervisors supervise their doctoral students to a large extent or completely together with other academics. Here again there is a noticeable difference between the individual doctoral studies and the structured programmes as well as between the individual faculties, as far as the sample numbers allow for differentiation. Team supervision, as reported by the university professors and lecturers themselves, occurs more frequently in structured programmes (27%) as well as in the Biological Sciences (39%) and Physics (33%); the supervision through teams is significantly less widespread in Social Sciences (13%) and in Computer Science and Mathematics (15%). Delegating the actual supervision largely or completely to other employees is excluded as a course of action by four from five supervisors virtually completely – women (88%) more so than men (77%), in Social Sciences (92%) more so than in Biological Sciences (54%) and in Medical Science (65%).

The introduction of the supervisory teams is often accompanied by the consideration that those responsible for the supervision should not

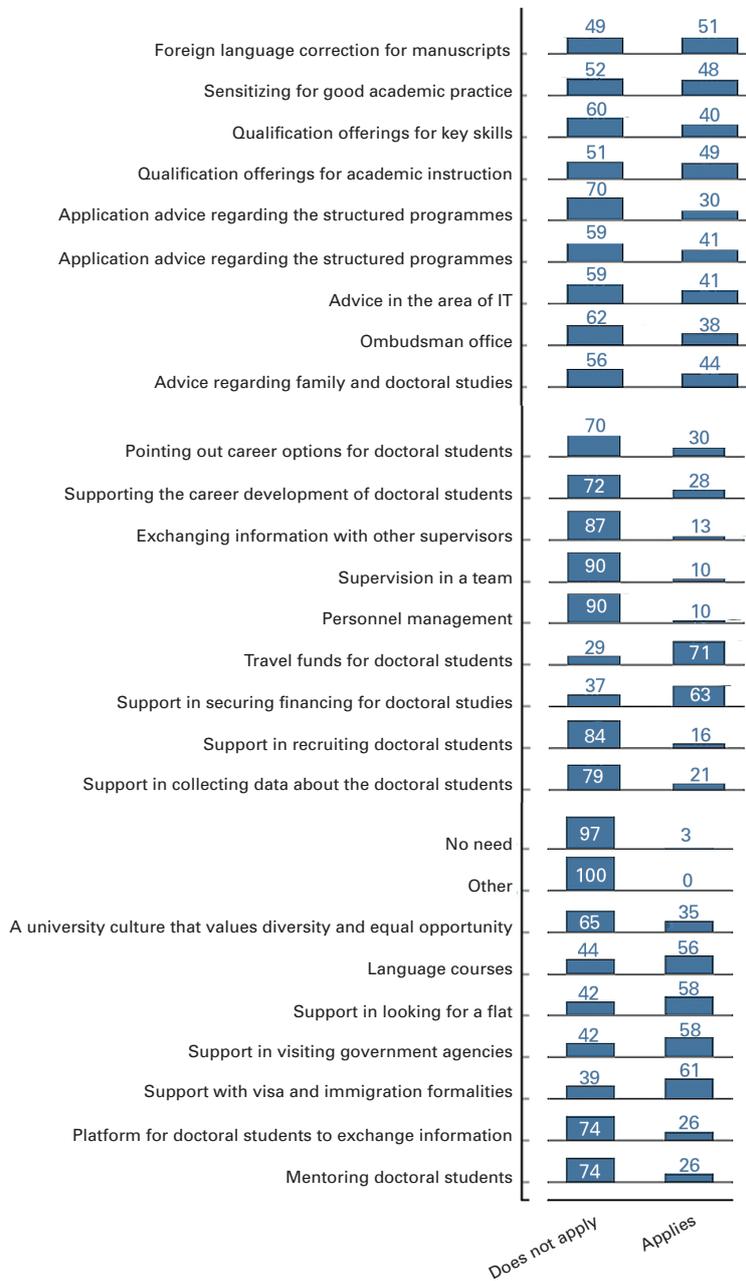


Figure 5: Supervisors' desire for more intensive support in the course of doctoral student supervision, according to certain predefined areas.

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

also assess the doctoral performance at the end. The university professors and lecturers at the Goethe University were asked for their estimation of such a personnel decoupling of supervision and assessment. In the course of this, two out of three supervisors indicated that they do not find such a decoupling does make sense – the female supervisors somewhat more so than the male supervisors, 15% had not given any thoughts about it, 23% consider a separation of supervision and assessment to be reasonable. Interestingly, the rejection of the idea is higher in the structured programmes (71%) than in the individual doctoral studies (56%), although supervisory teams are more common there. At the same time, fewer people in the structured programmes have not given any thought about this. It can therefore be cautiously concluded that those who tend to favour a pluralisation in the supervision, do not at the same time advocate the decoupling of supervision and assessment.

3.5.3 Other Aspects of the Structured Support

In addition to the two instruments highlighted in the survey – supervision agreements and supervisory teams – the doctoral students as well as the university professors and lecturers were asked where they see potential for improvement in the course of doctoral studies and its supervision.

A total of 409 **doctoral students** took the opportunity to answer an open question regarding such possibilities for improvement. According to this, the doctoral students at the Goethe University most frequently want the following

- more emphatic and more reliable support (n=45),
- clear structures and guidance from supervisors (n=45) and
- supervisors having more time available for the actual supervisory tasks (n=23).

With a special focus on a later academic career, the doctoral students want

- an improvement in the financing options for the doctoral studies (n=33),
- more offerings for academic training (n=23) and
- more intensive supervision (n=23).

With regard to preparing for a career outside academia, the doctoral students propose,

- improving the networking with people from industry (n=51),
- providing more offerings for training (n=30),
- organising more information events (n=29) and
- greater use and promotion of internships during the doctoral phase (n=29).

The **university professors and lecturers** were asked, in terms of some of the proposed areas, to what extent they desire stronger support or relief, respectively. In this regard, the greatest support was shown for a greater allocation of travel funds for doctoral students, support in raising funds for doctoral students, help with visa and immigration formalities, help with visiting government agencies, help with searching for a flat as well as expanding the offering of language courses and foreign language corrections for manuscripts (See Figure 5). Most of these suggestions for improvements on the part of the supervisors addressed, if nothing else, international doctoral students. The proposals are relatively similar across the faculties.

In addition, the supervisors were given the chance to answer an open question and propose further improvements. The answers were overall very heterogeneous and were often strongly related

to the discipline area. Some general patterns can be identified, however. Thus, they have proposed in particular

- structuring doctoral studies at the Goethe University more clearly, in particular, avoiding ‘dual structures’ in connection with programmes and individual doctoral studies as well as avoiding making the doctoral phase like ‘school’ (n=28),
- taking the workload related to supervision into account and valuing it more (n=23) and
- creating more specialised further training possibilities (n=8).

3.6 GRADE

GRADE is an interdisciplinary institution for doctoral studies at the Goethe University. As such, it combines the structured doctoral programmes which the Goethe University has at its disposal, but is also available to individual doctoral students outside of the programme. All doctoral students can become members of GRADE. It was founded in 2009 and limited itself in the first year to doctoral students in the natural and life sciences. In 2010, GRADE was extended to the faculties of Social Sciences and Humanities. The overarching goal of GRADE is, according to its code, ‘to ensure a high quality of doctoral student education in cooperation with the faculties on the basis of the valid doctoral regulations, while at the same time also contributing to the creation of a sustainable academic profile of the university.’¹² The central tasks defined in the code are quality assurance and the determination of minimum standards, the provision of central services for doctoral students from Germany and abroad, the external representation of the postgraduate edu-

cation at Goethe University, securing specialised training, the increase in interdisciplinarity and the provision of *transferable skills* as well as the awarding of scholarships and grants¹³. Furthermore, it is apparent from GRADE’s self-concept that GRADE has a particular focus on making a contribution towards preparing doctoral students for their future careers.

GRADE is known to more than half of the doctoral students at Goethe University – the proportion of female doctoral students (61%) who know GRADE is higher than that of male doctoral students (48%). Since the structured doctoral studies programmes are in principle assigned to GRADE, the **awareness of GRADE** is more pronounced among the doctoral students of these programmes (69%) than among the doctoral students with individual supervision (49%). The awareness varies greatly according to the faculties. More than 85% of the doctoral students from the Biological Sciences are aware of GRADE. More than two out of three doctoral students are familiar with GRADE in Business and Economics, in Social Sciences, in Educational Sciences, in Psychology and Sport Science, in New Philologies, in Computer Science and Mathematics and in Biochemistry, Chemistry and Pharmacy. In contrast, GRADE is hardly known at all in Law (7%) and in Medical Science (13%).

Among the university professors and lecturers, GRADE is without exception better known. Three-fourths of them are very well aware of GRADE – women (88%) more often than men (75%), participants in structured programmes (90%) more often than those who exclusively supervise individually (67%). The awareness of GRADE in the different faculties is comparable with the level of knowledge of the doctoral students. The awareness of GRADE by university professors and lecturers in Medical Science (59%) and in Law (63%) is below average.

Of those students who are very familiar of GRADE, 43% are also formal members of GRADE – among them are again more female doctoral students (47%) than male doctoral students (37%). This is

12 Section 1 of the Code of the Goethe Graduate Academy (GRADE) of Goethe University Frankfurt am Main according to the decision of the Senate on 14 July 2010 and the approval of the Committee on 21 July 2010. In: Goethe-Universität Frankfurt am Main: UniReport of 8 November 2010. On the internet: <http://www2.uni-frankfurt.de/37227509/GRADE-Ord-nung-dt.pdf> (30.11.2013)

13 Cf. *ibid.*

also reflected in the distribution of the **GRADE memberships** among the subject areas. Overall, compared with the subject-area distribution in the sample, the Social Sciences (sample: 7.8%, GRADE membership: 15.8 %) and the Biological Sciences (sample: 12.8%, GRADE membership: 23.8%) are overrepresented, while Law (sample: 6%, GRADE membership: 0%) and Medical Science (sample: 16%, GRADE membership: 2.3%) are significantly underrepresented.

Additionally, the prevalence of doctoral students in structured programmes has an impact on GRADE, so that ultimately more structured-programme doctoral students are members of GRADE than is the case with individual doctoral students, even though at the Goethe University, more than twice as many doctoral students graduate individually rather than in structured programmes (see Section 3.3). A total of 44% of doctoral students in structured programmes and 15% of the doctoral students with individual supervision describe themselves as members. It remains an open question how many doctoral students are formally members of GRADE by virtue of belonging to a structured programme of the Goethe University without knowing this or without identifying themselves as members. As the most frequent reason why a membership is not considered, the doctoral students mention a lack of time for registering (34%) and too high of an administrative burden (25%). It is seldom the case that the desired support already exists outside of GRADE (16%) or is not provided by GRADE (9%). From this, it can be concluded that a significant number of doctoral students could still be gained as GRADE members.

When asked whether they would recommend a GRADE membership to their doctoral students, 40% of the university professors and lecturers (if they know GRADE) answered positively for all of their students, and another 32% for at least some of their doctoral students; 28% do not give a **recommendation for a membership**. Large differences according to gender are not observed. Those who are involved in a structured programme (45%) are more likely to recommend membership compared to those who supervise individually (35%). A recommendation correlates

with a fundamentally positive attitude of the supervisor with respect to the offerings of GRADE. Every third supervisor considers GRADE's support offerings overall for important or very important – women (38%) more so than men (30%).

The doctoral students vary greatly in their familiarity with the individual GRADE offerings and as a result, they each utilise the offerings to a different extent. The workshops of the Training Programme are the best known offerings. Of the doctoral student respondents, 93% state that they are aware of them. Of these, 93% have already used the workshop offerings. **Awareness and use** of the offerings are also apparent in the case of language courses and networking events. The male doctoral students (51%) are more frequently familiar with the language courses than the female doctoral students (37%) and are therefore ultimately somewhat more likely to attend the courses (41% vs. 35%). Only a quarter of the doctoral students are aware of the DocAGs and the career talks; yet this quarter utilises this offering to an over proportional extent (44% and 39%). The doctoral students in structured programmes demonstrate above average values for awareness and use of the DocAGs (awareness: 29%, use: 47%) as do women (awareness: 26%, use: 52%). Men's awareness and use of the career talks is above average (awareness: 29%, use: 50%). However, the Buddy Programme (9%) and individual coaching (13%) are hardly known (see Figure 6).

Two-thirds of the doctoral students who have used individual offerings are satisfied or very satisfied with the **quality**. Looking at it the other way around, the proportion of those who are dissatisfied is at most five per cent for all offerings. Doctoral students who are individually supervised estimate the quality of the offerings as being somewhat higher. A gender-specific estimation is not observable.¹⁴

The supervisors evaluate the individual offerings in a slightly more differentiated manner. The workshops of the Training Programme have been evaluated as important or very important by 46%,

14 The Buddy Programme, Language Service and individual coaching were not considered here due to low sample numbers.

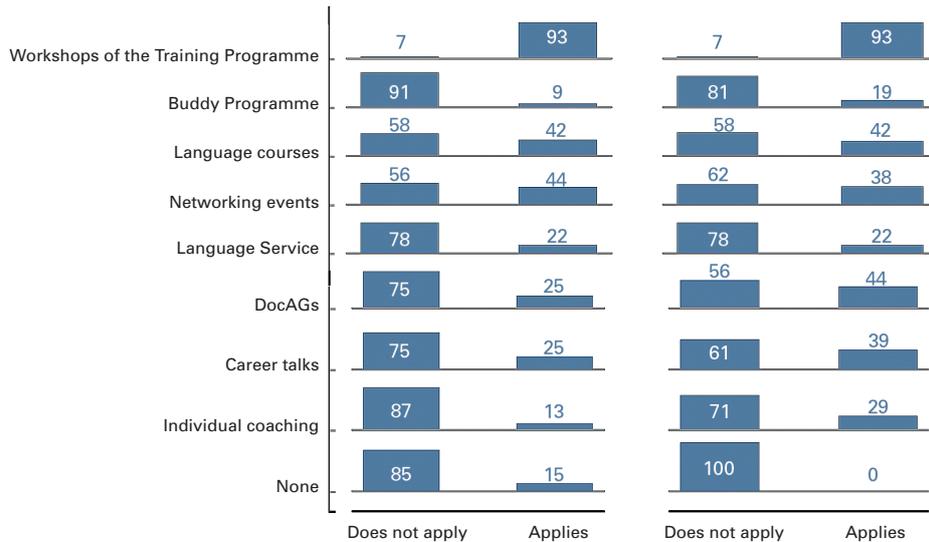


Figure 6: Awareness of the different GRADE offerings (left) and their use (right), provided that the respective offering is known to the doctoral students.

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

which is above average. Even greater **importance** is attributed to the language courses (55%) and the Language Service (52%). And vice versa, the Buddy Programme is considered by a quarter to be unimportant or completely unimportant.

In an open question regarding possible improvements, doctoral students as well as supervisors refer to more specifically tailored GRADE service offerings (each n=10).

In addition, a central goal of GRADE is to improve the preparation for the respective **career goals after graduation**. An evaluation in this respect shows (see Figure 7 overall) that doctoral students who are at the same time GRADE members (38%) are significantly more likely to aim for an academic career as those who are not GRADE members (28%) or who do not even know of GRADE (20%). This is, however, probably largely due to the fact that doctoral students in the Social and Biological Sciences, who are often more interested in an academic career, are – as described at the beginning – overrepresented and

that the doctoral students in Law and Medical Science, who tend to be interested in a career outside of academia, are underrepresented; the sample numbers do not allow for any definitive statements to be made in this respect.

In GRADE, the male members (52%) are considerably more likely to be interested in an academic career as the female members (32%). Whether this is primarily to be seen as an effect of the different distribution of subject areas can only be surmised, due to the low sample numbers in each respective differentiation.

Overall, 28% of the doctoral students feel well or very well prepared for an academic career, while 13% see their **preparation for a career in academia** as poor or very poor. So the majority varies between these two positions. Nevertheless, if one considers the two poles in a differentiated manner according to the relation of the doctoral students to GRADE, two things become apparent. Firstly, GRADE membership itself does not have a positive effect on the evaluation of being

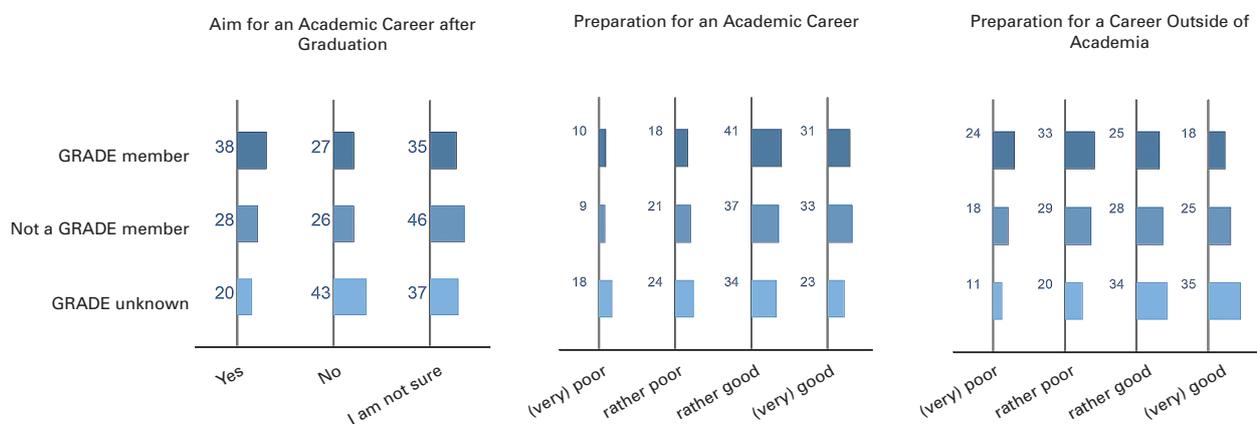


Figure 7: Aim of preparing for an academic career after graduation and preparation for such a career in conjunction with GRADE membership.

Source: Manuela Zinnbauer, Marc Kaulisch, Stefan Hornbostel: Promovierendenbefragung an der Goethe-Universität Frankfurt (Doctoral Student Survey at the Goethe University Frankfurt). Berlin 2013. – Presentation by the current work's author.

prepared. This evaluation remains approximately on the same level as that of non-members. Secondly, there is a noticeable difference compared to those who do not even know GRADE and those who – as shown – have a lower tendency to want to stay in academia for the long term; of these doctoral students, only 23% feel that they are (very) well prepared for an academic career and as much as 18% (very) poorly prepared. While GRADE does not therefore cause a relative improvement in feeling prepared, it does not fall behind, considering the higher expectations of its members compared to the non-members. This is reflected in the satisfaction with the quality of the infrastructure, the research environment and the supervision. A membership in GRADE in this case is more likely to lead to a more negative assessment as is the case with non-members. However, the level of satisfaction is generally higher than the corresponding satisfaction level for those doctoral students who do not know GRADE at all. It can therefore be assumed that any improvement effect due to GRADE is compensated by increased expectations on the part of the doctoral students.

The situation is different with regard to the **preparation for careers outside of academia**. Here, fewer GRADE members indicate that they are (very) well prepared for such a career (18%) compared to non-members (25%). Yet those who have nothing to do with GRADE at all feel better prepared for a non-academic career (35%). This also applies to the Social and Educational Sciences, even though – as already described – the GRADE members in these faculties are more interested than those from the other faculties in a career outside of academia compared to non-members. For these doctoral students, a membership in GRADE has a comparatively negative effect on the perceived preparation. A comparison of the self-assessments of doctoral students in structured programmes and the self-assessments of doctoral students with individual supervision shows that this is largely due to the structuring effects of GRADE. So the individual doctoral students feel more often (very) well prepared for a career outside of academia (30%) than the structured-programme doctoral students (24%). Such a difference is not observed in the case of preparation for a career in academia.

4 Summary

In April and May 2013, iFQ surveyed 6,600 doctoral students as well as the 1,600 university professors and lecturers from all 16 faculties of the Goethe University. The response rate to the survey was 26% of the doctoral students and 28% of the university professors and lecturers. The following text summarizes and consolidates the most important results of the survey with respect to the postgraduate education at the Goethe University. In doing so, the statements about the quality of supervision at the Goethe University in general will firstly be summarized and then the quality of support at GRADE in particular. Finally, some statements will be made regarding the structured instruments of the supervisory agreements and the supervisory teams.

4.1 Overall Quality of Supervision at the Goethe University

Among the doctoral students at the Goethe University, almost half are overall satisfied or very satisfied with the supervision. In contrast, only 12% are dissatisfied or very dissatisfied. Great differences according to gender or being in the social sciences and the humanities versus in the natural and biological sciences or according to completing individual doctoral studies versus participating in a structured doctoral studies programme could not be found. This suggests an overall positive basic situation for the doctoral students at the Goethe University.

There is, however, room for improvement, as shown by the doctoral students' desire for considerably better supervision. For all the supervisory aspects covered in the survey, the doctoral students' assessments indicate that the real supervision does not live up to their expectations. No aspect of supervision was assessed by the doctoral students as being too intensive. Yet in the case of possible improvements, the desired support cannot and should not be met without first clarifying to what extent the desired intensity of individual supervisory aspects are compatible with the qualification objectives of doctoral

studies – for example, conducting research independently – or if on the contrary a certain amount of discrepancy between the desired supervision and the real supervision is necessary.

The doctoral students in the structured programmes have comparatively higher expectations with respect to supervision. For all the aspects covered in the survey, their desire for more intensive or very intensive supervision were five percentage points above the level of supervision desired by the individual doctoral students. At the same time, they evaluate the actual supervision intensity better by almost five percentage points. From this, it can be concluded that the structured programmes create a stronger sense of expectation on the part of the doctoral students, which can by all means be taken into consideration; the aspiration level of the doctoral students, however, has not been met.

The desire for support in terms of content and methodological questions is particularly evident among both individual doctoral students and structured programme doctoral students with respect to the supervisory tasks that are mostly related to the dissertation. Among the doctoral students with individual supervision, 65 or 67% desire in this respect intensive or very intensive supervision, while 44 or 36% see this need as having been met. The situation is similar for doctoral students in structured programmes.

The difference is even greater – measured as percentage points – with respect to support with publishing. In this respect, 58% of the individual doctoral students desire intensive or very intensive supervision. However, fewer than half of them (26%) see this as being realized to that extent. With regard to support in publishing, the discrepancy in the evaluations of the doctoral students in structured programmes is greater (intensive/very intensive desire for support: 64%, intensive/very intensive support in reality: 29%).

The supervisors have a different assessment with respect to types of support. Thus, the frequency of meetings with doctoral students is already estimated as being significantly higher than the frequency estimated by the doctoral students

themselves. This more optimistic self-evaluation is also reflected in the question as to which individual types of support they provide their doctoral students. And so measures like encouraging participation in conferences and giving presentations or joint publishing are positively confirmed by four out of five supervisors. However, it is noticeable that the support with publishing, which overall has been rated as so important by the doctoral students, is comparatively less important for the university professors and lecturers in the structured programmes (joint publishing: 81%, encouragement to publish independently: 56%). Here, the supervisors in individual supervisory situations are noticeably more active (87% or 68%).

4.2 Quality of Support at GRADE

A significant number of doctoral students at Goethe University are not members of GRADE, but there is still the possibility of attracting some of them as members. This can be concluded on one hand from the fact that almost half of the doctoral students are not familiar with GRADE – in particular in Law and Medical Science. On the other hand, in answer to the question of why they have not become members despite knowing about GRADE, no answer is given about doctoral study support that is either lacking at GRADE or is covered in another way. Instead, answers are given about lacking time for registration and there being too much of an administrative burden.

It should be noted that particularly doctoral students who are individually supervised are rather underrepresented in GRADE.

Three-fourths of the supervisors are familiar with GRADE, 40% recommend GRADE to all their doctoral students and a further 32% recommend a GRADE membership to at least some of them. This recommendation is strongly correlated with a positive attitude regarding the individual offerings of GRADE.

The doctoral students are familiar with the individual offerings of GRADE to a varying degree and as a result, they have made use of them

very differently. The workshops of the Training Programme are the best known offerings (93%) and – provided that they are known – the most used (93%). All the other offerings lag clearly behind and in part show significant differences with respect to gender in terms of use. While the awareness of some offerings like the DocAGs and the career talks is below average, these offerings are comparatively high in demand from those who are aware of these offers. The Buddy Programme and the individual coaching are hardly known and hardly used. The quality of the individual offerings is consistently predominantly positively evaluated.

The supervisors evaluate the GRADE offerings differently. When asked about the importance that they attribute to the individual offerings, the obviously strongly established workshops of the Training Programme are the most popular (important/very important: 46%). However, the language courses (important/very important: 55%) and the Language Service (important/very important: 52%), which are less popular among doctoral students, are considered more important. At the same time, taking into account the overall desire of the supervisors for greater support or relief in particular areas of their doctoral student supervision – shown in detail in Figure 5 on page 23 – gives the impression that the university professors and lecturers more strongly associate GRADE with offerings for international doctoral students than the proportion of international doctoral students would suggest. This may have an impact on the commitment of the supervisors for GRADE, in particular, for those offerings that are not specifically directed towards international doctoral students.

A central characteristic of GRADE is also that its doctoral students exceedingly often pursue an academic career in comparison to the other doctoral students at Goethe University: 38% of them aim for an academic career after graduation. Among those doctoral students who know GRADE but are not members, the proportion of those who aim for an academic career is less with 28%, and among those doctoral students at Goethe University who do not even know of GRADE, the proportion is even significantly lower

with 20%. This is largely due to the fact that the doctoral students in the Social Sciences and Biological Sciences, who are more often interested in an academic career, are overrepresented in GRADE and the doctoral students from Law and Medical Science, who are rather interested in a career outside academia, are underrepresented. Nevertheless, the overall stronger focus on academia remains a distinctive feature of GRADE in its current composition and structure.

With regard to the question of whether GRADE members are better prepared for an academic career than non-members, a similar conclusion can be drawn as was drawn earlier for the difference between the desire for supervision and the supervision in reality in individual doctoral studies versus doctoral studies in structured programmes at Goethe University. A membership in GRADE does not lead to a relative improvement in the assessment of being prepared for an academic career compared to not being a member. Although this can also be attributed in part to the overall increased sense of expectation of the GRADE doctoral students. Nevertheless, this circumstance should be taken into consideration in the further development of GRADE.

4.3 Quality of the Supervision Agreements and Supervisory Teams

Finally, a summary is provided of the most important statements regarding Supervision Agreements and Supervisory Teams as instruments of structured support of doctoral studies at the Goethe University.

Only every third doctoral student at the Goethe University has a written supervision agreement, so that this instrument of structured support is not yet widespread. Doctoral students in structured programmes have entered into such agreements more often than average (45%). Their use is also strongly discipline-specific. The benefits of such agreements are evaluated very differently by doctoral students and supervisors. Almost half of the doctoral students find them to be helpful, but 17% did not. As the most frequent reason why supervision agreements are not considered helpful, doctoral students cite the missing commitment on the part of their supervisors; so the criticism is not directed against the instrument per se, but against its implementation. This is in line with the assessments of the university professors and lecturers. The supervision agreements are considered unimportant by 38%. Supervisors who individually supervise their doctoral students consider them unimportant less often than their colleagues in the structured programmes, even though the supervision agreements are used more often in the structured programmes. However, the largest group of supervisors– both in individual doctoral studies and in the structured programmes– has not yet dealt with supervision agreements. As a result, the following conclusions can be drawn:

- Written supervision agreements are significantly more important for the doctoral students than for the supervisors, as they are the ones who especially benefit from the greater commitment in the supervision process – provided that these agreements are implemented.

- At least on the part of the supervisory personnel, a greater value is placed on the agreements in the comparatively unregulated conditions of individual doctoral studies than in the structured programmes, where commitment is mostly also ensured through other means.

Both aspects should be considered in the further use and spread of supervision agreements at the Goethe University.

More than two out of three doctoral students in structured programmes state that they are supervised by more than one person. The supervisory team instrument appears at first glance to be better established than the supervisory agreements. At the second glance, however, it becomes apparent that a team of supervisors is only one in terms of numbers. The doctoral students with more than one supervisor indicate that in more than half the cases, the respective supervisors fulfil their tasks without consulting one another. In the social sciences and the humanities, the supervision is carried out – in the cases where several university professors and lecturers are involved – independently in as much as 71% of the cases. This picture is supported by information provided by the supervisors. In light of this, the Goethe University should clarify whether the concept of a supervisory team meets the conditions necessary to be considered a structured element in doctoral studies.

In connection with the supervision of the doctoral studies process by more than one person, one other instrument of structured doctoral studies is often also discussed: at least a partial decoupling of the personnel in the supervision process from the subsequent evaluation. Two out of three supervisors who participated in the survey do not consider such a decoupling to be advisable, whereas 23% find it reasonable; the others have not yet thought about this issue. It is notable that an attitude of rejection occurred more frequently in the structured programmes (71%) than in the case of individual doctoral studies (56 %), even

though supervisory teams are more common in the structured programmes and fewer people there have not yet had any thoughts on this issue. This suggests that the university professors and lecturers who fundamentally support supervision in teams are much more likely to disprove of a concurrent decoupling of evaluation. This should be taken in to account in the further development of the supervisory teams as an instrument of structured support of doctoral studies at the Goethe University.

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