

- Firm and fair incentives
- Firm and fair quality enhancement schemes
- Firm and fair organisation – graduate schools (*forskerskoler*) – and improved pedagogical form

Graduate schools

The graduate school is an internationally acknowledged form that provides PhD training, and which Denmark has adopted. This is expected as part of the PhD transition and is seen in many countries. While the panel applauds the introduction of graduate schools, the panel is at the same time quite critical towards the forms under which this has been organised. The Danish graduate school is most often neither fish nor bird. Graduate schools are innovative, but too varied in kind and quality. The varieties are bewildering and the differences in quality are disturbing. The funding principles applied, sadly, have contributed to the present situation through admitting far too many and far too small grants, thus implying that a graduate school in most cases is more a name than a substantial responsibility.

The panel is of the opinion that:

- Graduate schools need critical mass and disciplinary breadth and therefore solid funding.
- Graduate schools should be organised by universities but co-funded, chiefly by the Danish Research Training Committee (*Forskeruddannelsesudvalget, FUU*), on a competitive basis.
- Graduate schools work on an interdisciplinary basis, which has proven to be an equally solid ground of high quality work as traditional PhD training.

With this in mind, the panel recommends that an increasing proportion of Danish PhD training should be organised as graduate schools of a different kind than the large majority of those that exist today (see funding recommendations below for operative mechanisms). This Danish innovation should become the trademark that can sustain and improve the international recognition of PhD education in Denmark. We also recommend that Denmark create a system of learning and exchange of experiences between different graduate schools. In such a way this knowledge system can sustain its innovation capacity.

Pedagogical form

Pedagogical form, as part of the PhD transition, has changed considerably in the last couple of decades. Coursework, which broadens the students' capabilities, has been enlarged and improved and mobility increased. Standards vary however and the coursework is still not solid and comprehensive enough to be fully consistent with the idea of the PhD as a public good. Throughout the system, there are departments and even graduate schools where coursework is mostly lip service and where the international networks of faculty are too weak to provide good leadership and periods abroad are therefore haphazard and ill advised.

The panel recommends:

- Coursework should be strengthened, and broadened, to a minimum of 9 and a maximum of 12 months, and linked systematically to the more comprehensive coursework on the master's level.
- Teaching and dissemination work should be considered an integrated quality demand of PhD training and need not be itemised. There should be a maximum of 3 months of paid work as a teacher/assistant for the PhD student.
- The teaching and dissemination a part of the education – including experience with project management and with relevant pedagogical tools – these should be documented and evaluated as part of the PhD training.
- Supervision should be emphasised and training programmes introduced.
- Assistant professors (*adjunkter*) and postgraduate fellows should be allowed to act as project supervisors (*projektvejledere*) and assistant supervisors (*medvejledere*).
- A person from a foreign research institution should always be on the PhD evaluation committee. Exemption from this rule should only be allowed through special permission from the Rector.
- The PhD thesis must be publicly available (as a minimum, assigned an ISBN number and available in major university libraries) a minimum of three weeks before the public examination.
- The requirements for external principal supervisors (*hovedvejledere*) from government research institutes, the industry and the public sector should be clarified. Under normal circumstances, it should not be possible to act as principal supervisor (*hovedvejledere*) without a PhD or another advanced academic degree of similar standing.

The thesis

The panel notes, again, a considerable local variety as to the formal demands on the thesis. Monographs are still the norm in many of the social sciences and the humanities, but the article-based thesis is gaining ground and is of course already the norm in the natural sciences. The number of published and required articles varies, however. While the panel is concerned with a tendency in some universities and faculties to allow for fewer published articles and in less prestigious journals, we still do not argue for any centralised norms; they would easily become counterproductive and overly rigid. However, the development of local quality norms should be encouraged. Further, we recommend that the present recommendation, that there should be international representation in examination committees, is made into a requirement in the PhD Order. Exceptions should be decided on the level of Rector.

Mobility

There is strong and general support among students, faculty and stakeholders for the mobility requirement in the present University Order. The panel also acknowledges the strong internationalisation of PhD training. Again, variety is the pattern, but since the general tendency is that mobility is growing, is taken seriously and is pursued by those who can, we see no need to introduce further rules or incentives.

However, we would like to encourage a wider definition of mobility to include admission of foreign students to a much larger extent than before, 25% of total enrolment is a reasonable target for the coming decade. Mobility should be interpreted to mean an active recruiting of foreign PhD students, both for admissions to Danish PhD training and for shorter visits. This is a quality driver of the Danish PhD degree and a potential source of income (from extra-EU students). Mobility in this sense should be made part of funding incentives (see below).

Admission

Admission is a critical feature of the top-notch graduate schools. The traditional pattern in Denmark is that admission is organic, conventional, traditional and therefore often unfair and with sub-standard competition. The panel recommends strongly that this be changed and that strict norms for admission should be introduced with some minimum criteria defined centrally. We recommend a procedure with fixed admission dates (once or twice annually) and transparent evaluation criteria. We also recommend that the admission panel on the graduate school or faculty level should be required to contain two or more foreign members and that the criteria of the committee be made public.

Relation between PhD and Master's education

Both the 5+3 and the 4+4 models of higher education should be possible. The 4+4 year model has the advantage of sitting well with the graduate school concept: broad and advanced coursework followed by a specialised PhD project. There should be flexibility in the relations between master's programmes and graduate schools.

While we do believe that both models, 5+3 and 4+4, should be viable, it seems clear to us that the best conditions for a successful PhD training would be achieved if the 4+4 model known from the University of Aarhus could somehow be combined with the competitive admissions process that we have outlined above, for example in a 4+(1+3) model. In essence, it would mean a graduate school at the first stage of which a fairly large number of students entered, and where in particular advanced coursework was undertaken alongside a qualified final thesis (*bovedoppgave*). We recommend that this issue be further explored.

Productivity and dropouts

Danish PhD education is reasonably efficient, despite the fact that the average time of study in Denmark is slightly more than four years, one year more than the nominal three years. Part of the reason for the longer study period is almost certainly parental leave, although it has not been possible to clarify this with data existing at present.

The panel recommends:

- that universities collect more detailed data concerning study time and parental leave during PhD studies in the future so that the situation can be monitored properly;
- that greatly exceeding the recommended length of study could lead to sanctions in the financing of future PhD students;
- that the Ministry considers better ways of measuring the real study times, weighing in the dropouts;
- that dropout figures be more carefully monitored and data and information be systematically collected and studied by universities as to why PhD students drop out.

Funding

The state holds the main responsibility for PhD funding, as PhD training is a public good. All PhD funding must be visible, transparent, accountable, and fair. The universities should remain the sole degree granting institutions.

The panel has seen major structural problems in the resource allocating system, which will aggravate unless they are dealt with as new and large funds arrive. We recommend the introduction of PhD contracts to secure open agreements between universities and the government on the general direction and ambition of the respective universities. PhD contracts allow for the possibility of state and government influence concerning the division of PhD training between different science areas.

We recommend that incentives for continued quality enhancement be secured through three main funding streams:

- a) Faculty endowments, or core grants. They should be determined on the basis of the PhD contracts and should be followed up regularly, but with fairly long intervals to secure long-term planning in the universities. This will allow for reallocation between universities but on a modest scale and over the long term. The portion of total PhD funding should be between 30 to 50%, we recommend it start at 40%.
- b) Competitive funding. This funding stream, which should provide by far the largest part of the additional funding, is necessary to achieve faster reallocation between universities and provide a quality enhancing incentive. It could include the following categories: stipends, including co-funded stipends and a “+100 programme” for selected highly talented PhD candidates; projects, including stipends included in young researchers’ projects; programmes; graduate schools. The single largest category should be graduate schools, organised according to the graduate school model, which we have advocated, and which need substantial funding for long-term investment in PhD training. We recommend that these funds in their absolute majority be distributed by the Danish Research Training Committee (*Forskeruddannelsesudvalget, FUU*), which should be reinforced and equipped accordingly, including substantial administrative and expert capabilities for the follow up on quality and performance, a capacity that could also serve as a support mechanism for government in the assessments necessary for funding stream a). With this arrangement FUU will necessarily take a distinct and central role and must be able to take decisions with authority, which implies that the constitutional relations between the Danish Research Coordination Committee (*Koordinationsudvalget for forskning, KUF*) and FUU need to be re-examined.

- c) The third funding stream is to support public and industrial PhDs. This is a development and expansion of the existing *ErløversPhD-ordning*, which should increase substantially to around 10% of national total PhD funding and should be expanded to include the public sector.

Post-doctoral funding

To shape a sustainable and well balanced university system, the PhD reform package should include a programme for postgraduate training. A principal reason is to avoid putting demands of commercial character too heavily on the PhD training and thus put at peril its function as a public good. We recommend that, all in all, about 20% of the total costs in the package be allocated to postgraduate stipends, for a period of two to six years after the PhD degree is conferred. One aim is to secure career opportunities for academics, another aim is to provide Danish industry and companies with "innovation postgraduates".

We expect the academic purpose to require about two thirds of the funds, and the innovation purpose one third. We recommend that the competitive academic postgraduate programme be managed by *Det Frie Forskningsråd* (the part that is not already covered by the +100 programme). We recommend that the competitive innovation postgraduate programme be managed by *Det Strategiske Forskningsråd*. For the latter we also recommend that cooperation with industry be sought, including co-funding to expand the programme.

Monitoring for quality

We recommend that a carefully monitored transition period of four to six years be introduced to secure appropriate use of increasing funds and introduction of firm and fair principles. A PhD monitoring board with international representatives should be appointed by the Ministry of Science, Technology and Innovation. It should report annually to the Ministry on the progress of the expanding PhD.

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Appendices

Appendix 1. Terms of reference

Appendix 2. Funding streams for PhD training

Appendix 3. Plans for meetings

Appendix 4. Plans for site visits

Appendix 5. Number of enrolled PhD students

Appendix 6. Registered, graduated and drop-outs 1998 and 2001 by scientific area

Appendix 7. Comparisons among the Nordic countries

Appendix 8. Self-evaluation questionnaire

Appendix 1. PhD evaluation 2005 - Terms of reference

Background

As a follow-up on the reforms that were implemented in 1993, the Danish Research Council evaluated the Danish PhD in 1999. The results of the evaluation were published in the report: 'A good start - the PhD in Denmark'. The report described the development and proposed a number of recommendations for the future. The Danish Research Council, which succeeded the former Research Academy, was established in the spring of 2000 and concluded its work by the end of 2003, where its tasks were transferred to the PhD Department within The Council for the Coordination of Research.

The PhD has been a central theme in both Nordic as well as European research-policy. Due to this, the Nordic Academy of PhD has collaborated with other Nordic universities in order to define goals for the Nordic PhD education. In addition to this, the Nordic Academy for Advanced Study, NorFA (since 1.1.2005 NordForsk) has worked on a European level, where it has worked on the realisation of respectively the Lisbon and the Barcelona visions. Due to this and in light of the Danish Parliament's decision to increase the number of PhD students by 50% yearly from 2005, the reason for carrying out a new evaluation of PhD programmes in 2005 is evident.

Overall objectives

To analyse and evaluate the Danish PhD with regard to examining its structure, organisation and quality, i.e.:

The structure of the PhD in Denmark, i.e., the suitability of the main-model within an international perspective, e.g.:

- To enrol students on the basis of a pre-formulated projects.
- To have a continuous enrolment.
- That every student has an individual study plan.
- That the student's main supervisor has the same authority over the student as a staff-student committee has over other kinds of students.
- That the student's supervisor is not a member of the judging committee.

- That all universities can offer a PhD by choice of the student.
- The juridical framework for the PhD, especially the principal regulation via a departmental order with warrant/authority in the university law and possible alternatives.
- The economical framework for the PhD, among others the correlation between central and decentralised agents, between state, and other public and private financing.
- The departments' organisation of the PhD.
- The organising of PhD education in relation to the correlation between the grade-giving institutions and additional agents, and
- The assignment/placement of responsibility for the PhD education in the system as a whole and its relevance. As a part of this, the evaluation must
- Investigate quality and diversity in the PhD.

The quality in the PhD, e.g.:

- Recruitment and enrolment
- The quality of the educational elements (courses, counselling, international study programmes and defence of the PhD project).
- Completion and period of studying
- Continuous quality control, among others the half-yearly reports
- Course of carrier
- Size of the PhD environments in relation to 'critical mass', among others:
- The Danish PhD schools and their quality and contribution to quality improvement (this can happen via a more profound analysis of a number of these schools)
- The role of the Danish PhD leaders as leaders of the professional environment and their responsibility for the recruitment of talented PhDs and other scholars/researchers
- The conditions in terms of education, research and economy (level of enrolment, integration and financing).

The diversity within the PhD, e.g.:

- Is there sufficient variety in the way the PhD takes place within the subject areas?
- Is the range of research environments, which can support a PhD, sufficiently represented? i.e., incorporation of the sector research institutions, hospitals and researching or researching relevant businesses and organisations.
- Its division into two main areas: is it preferable with more kinds of PhDs financed from the public?

Timeframe

- An international panel of 6, representing professionally and highly qualified persons with an extensive knowledge about PhDs will be established in June 2005.
- The panel's task is to execute the evaluation and produce a report with conclusions and recommendations.
- With point of departure in the terms of reference of the evaluation and after discussions within the panel, information about the Danish PhD as well as a number of relevant partner's points of views on the PhD in Denmark will be collected.
- After this, an analysis of the Danish PhD in an international perspective will be executed in order to place the Danish PhD in relation to other countries' models.

- In February 2006, the panel delivers the final evaluation to The Ministry of Science, Technology and Innovation. The Ministry will subsequently send the evaluation report in a public hearing.
- Denmark's Council for Research policy will host a conference in March 2006, in order to discuss the ways in which the panel's recommendation can be followed up.

Data

Data to use in connection with the panel's work include:

- Information from the relevant institutions residing under The Ministry of Science, Technology and Innovation.
- Questionnaire about PhD students' satisfaction.

In addition to the standard information, which can be found in the research statistics and from the Danish Research Agency, the following information will also be collected:

- The structure of the faculties' PhD, including research academies and study programmes (the rules and completions of the departmental order, which the institutions must undertake, are to be forwarded. Alternatively a plan of the institutions and their websites can be presented cf. the demand that these must be accessible on these sites).
- Placement of PhDs/research schools in the faculty-system - e.g. the relation to other participatory faculties and agents who are part of the PhDs/research schools.
- Activities concerning qualification of supervisors.
- Principles and procedures for the implementation of the judging committee.
- Initiatives vis-à-vis internalisation.
- Support from Nordic and European organisations that support research educational/PhD activities such as NorFa and Marie Curie Actions.
- Financial models for PhDs / research schools.
- Plan of the financial sources and range within the last five years.
- In addition to the PhDs that are to be read by the panel, the following will also be forwarded:
 - The study plans according to which the chosen PhDs have been executed cf. departmental order §10.
 - The existing estimations of the full study process cf. departmental order §13.
 - The final assessment of the PhD.
 - The half-yearly evaluations that have been executed in connection to the actual PhD.

Consultation of relevant actors

Relevant agents within the area of PhDs / research education should be consulted in connection to the evaluation. The relevant agents are the 26 institutions able to educate PhDs, university hospitals, various businesses and organisations that are part of the business-PhDs/ business research education and the established PhDs/research schools. The individual agents in the

research consulting system should also be consulted. In addition to this, it is advised to consult relevant agents within scientific/research societies.

The panel

1. Sverker Sörlin (head of panel), Professor, Office of History of Science and Technology, Royal Institute of Technology, Stockholm, and Scientific Director, Swedish Institute for Studies in Education and Research (SISTER), Stockholm.
2. Peder Andersen, Chief secretary, The Economic Council, Denmark, and participant in the panel in the 1999 PhD evaluation.
3. Dr Bodil Holst, Assistant Professor, Institute of Experimental Physics, Graz University of Technology, Austria.
4. Morten Levin, Professor, Department of Industrial Economics and Technology Management, The Norwegian University of Science and Technology.
5. Mads Krogsgaard Thomsen, Administrative Director, Novo Nordisk A/S, with responsibility for research and development (R&D).

SISTER and the Danish Ministry of Science, Technology and Innovation will assist the panel.

Appendix 2. Public funding for research and development in Denmark – and the share spent on research training

In 2005 a total amount of DKK 10.032 mill. was appropriated in the state annual budget. In addition to this was other public funding.

Basic funding (65 %)

- DKK 6.563 mill.

Basic funding for the universities: 5.079 mill.

For research training: A great share. The universities decide themselves how much to spend on research training. However, the development contracts for 2005 specify a minimum number of PhD students for admission every year.

The 2000-evaluation indicated that the universities are the main financial source when it comes to scholarships for about half of the PhD students.

Basic funding for government research institutes: 1.044 mill.

For research training: Not known. The sectoral research institutes decide themselves how much to spend on research training. According to the law the sectoral research institutes contribute to research training. It is not known to what extent other ministries specify aims for PhDs in their result contracts.

Other research institutions: 441 mill.

Archives, museums and libraries belonging to the Danish Ministry of Culture. Besides this are other institutions such as Danish Polar Centre, Danish Meteorological Institute, Danish Economic Council, etc.

For research training: Not known.

Local governments: 754 mill.

Mainly funding for hospitals, the Institute of Local Government Studies etc.

For research training: A large amount of money for PhDs mainly within health science.

External funding based on open competition (35%)

- DKK 3.469 mill.

The Danish Research Councils: 1.242 mill.

The Danish Council for Strategic Research 315 mill.

The Danish Councils for Independent Research 923 mill.

For research training: A great share. The Research Councils grant funding either directly for research training or indirectly as parts of larger grants.

The Danish Research Coordination Committee:

For research training: 131 mill. for fully- and co-financed PhD scholarships, and for the promotion of quality in graduate schools.

Other: 1.746 mill.

"Other" different large grants adding up to a total of 1.113 mill. dealt with under 8 different ministries. Of these are 280 mill. dealt with under the Ministry of Food, 615 mill. under the Ministry of Science.

For research training: Industrial PhDs: 51 mill.

Other research training: Not known.

"Other" different small grants (less than 25 mill. each) adding up to a total of 633 mill. dealt with under 11 different ministries. Of these are 311 mill. dealt with under the Ministry of Science, 107 mill. under the Ministry of Education.

For research training: Not known.

International funding:

481 mill.

Danish contributions to CERN, EMBL, ESA, ESO etc.

For research training: Not known. Mainly indirectly via infrastructure and data etc.

Other sources: 1.242 mill.

Danish National Research Foundation 222 mill.

For research training: About 33 mill.

Danish National Advanced Technology Foundation 200 mill.

For research training: Not known.

International funding from EU and the Nordic Council of Ministers about 820 mill.

For research training: Not known.

The Budget (finanslov)

Other public funds

Appendix 3.

The evaluation panel has heard presentations from and conducted interviews with the following people:

Helle Otte, Ministry of Science, Technology and Innovation

Lars Beer Nielsen, Ministry of Science, Technology and Innovation

Pia Fredberg Nielsen/Vibeke Hein Olsen, The Danish Research Agency

Lars Æbeløe Knudsen, Ministry of Science, Technology and Innovation

Torben Rytter Kristensen, Ministry of Science, Technology and Innovation

Stein Larsen, The Secretariat of the Danish Council for Research Policy

Morten Kyndrup, chairman of The Danish Research Training Committee

Jannik Schack Linnemann, chief adviser, Danish Commerce & Services

Jens Adler Nielsen, spokesman, the PhD Network

Jens Vrå Jensen, adviser, Danish Association of Masters and PhDs

Professor Kirsten Hastrup, The Danish Council for Research Policy

Jens Peter Vittrup, Ministry of Science, Technology and Innovation

Mikkel Bülow Skovborg, adviser, Confederation of Danish Industries

Danish Academy of Technical Sciences (ATV):

- Pro-rector of research, professor Torben Greve, Royal Veterinary and Agricultural University, president of ATV
- Head of Customers' Centre Willy Bergstrøm, NES A/S, chairman of the Committee on the Industrial PhD Fellowship Programme
- Graduate engineer Lia Leffland, project manager at ATV

The Danish Rectors' Conference

Appendix 4. Plan for site visits

Monday, October 24 – Aarhus

09:00-13:00

BRICS - Basic Research in Computer Science, University of Aarhus.

13:30-17:30

iNANO – interdisciplinary Nanoscience Center, University of Aarhus.

Tuesday, October 25 – Aarhus + Aalborg

08:00-9:00

Meeting with the management of the University of Aarhus

09:30-13:00

Graduate School of Integration, Production and Welfare, Aarhus School of Business.

14:30-17:30

The International Doctoral School of Technology and Science, Aalborg University.

Thursday, November 24 – Copenhagen

09:00-13:00

KLIK, University of Copenhagen.

Lunch at the University of Copenhagen.

14:00-18:00

Dina Research School, The Royal Veterinary and Agricultural University.

Friday, November 25 – Copenhagen and Odense

09:00-13:00

NKT Academy, Technical University of Denmark.

14:30-18:00

The Postgraduate School of Health Sciences, University of Southern Denmark.

Appendix 5.

Number of enrolled Ph.D. students distributed according to universities of their master degrees, 1994-2004.

University of Copenhagen	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	279	268	281	202	241	232	247	160	74	196	3
Other Danish	29	29	32	34	37	55	42	33	21	28	1
Foreign	31	29	38	35	27	34	35	30	10	24	1
Not known	11	3	9	6	15	11	29	64	157	45	329
Total	350	329	360	277	320	332	353	287	262	292	334

University of Aarhus	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	162	160	152	168	150	146	145	85	72	44	-
Other Danish	13	25	20	17	15	21	16	17	13	6	-
Foreign	8	13	18	21	19	16	23	24	18	12	-
Not known	38	22	3	9	4	12	3	81	108	190	118
Total	221	220	193	215	188	195	187	207	211	252	118

University of Southern Denmark	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	55	54	50	50	58	46	57	50	35	15	-
Other Danish	18	28	19	19	21	39	43	25	17	8	-
Foreign	1	4	3	4	5	7	18	10	8	3	-
Not known	14	17	11	4	9	11	14	13	43	68	80
Total	88	101	83	77	97	103	132	98	103	94	80

Aalborg University	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	55	80	39	44	60	59	52	55	21	69	-
Other Danish	8	21	23	9	19	19	15	19	15	20	-
Foreign	11	19	10	23	23	25	22	27	7	27	1
Not known	1	3	3	1	3	7	8	17	55	7	107
Total	75	123	75	77	105	110	97	118	98	123	108

Roskilde University	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	13	29	27	11	20	13	9	18	9	17	-
Other Danish	15	33	12	20	22	24	15	15	8	11	-
Foreign	9	8	10	12	8	13	5	7	3	6	-
Not known	13	3	3	-	1	-	1	1	5	10	37
Total	50	73	52	43	51	50	30	41	25	44	37

Royal Veterinary & Agricult. University	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	57	56	24	42	60	73	57	41	35	13	-
Other Danish	22	27	14	25	30	40	25	15	17	5	-
Foreign	3	7	6	11	9	16	5	15	12	19	2
Not known	1	3	25	2	2	-	1	2	2	70	12
Total	83	93	69	80	101	129	88	73	66	107	14

Technical University of Denmark	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	0	0	0	0	0	0	0	0	0	0	-
Other Danish	0	0	0	0	0	0	0	0	0	0	-
Foreign	0	0	0	0	0	0	0	0	0	0	-
Not known	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0

University of Pharmaceutical Sciences	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Own	-	-	-	-	-	-	-	-	-	-	-
Other Danish	-	-	-	-	-	-	-	-	-	-	-
Foreign	-	-	-	-	-	-	-	-	-	-	-
Not known	24	24	34	31	28	46	24	29	23	34	32
Total	24	24	34	31	28	46	24	29	23	34	32

Appendix 6.

General overview of Danish PhD students. 1998. No. of individuals.

Altogether, 226 PhD students initiated studies in Natural Sciences in 1998

Natural Sciences	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	221	217	210	158	80	28	28
Finished without PhD degree	2	4	5	5	7	7	7
Finished with PhD degree	3	5	11	63	139	191	191
National total	226	226	226	226	226	226	226

Natural Sciences	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	98%	96%	93%	70%	35%	12%	12%
Finished without PhD degree	1%	2%	2%	2%	3%	3%	3%
Finished with PhD degree	1%	2%	5%	28%	62%	85%	85%
National total	226	226	226	226	226	226	226

General overview of Danish PhD students. 1998. No. of individuals.

Altogether, 231 PhD students initiated studies in Technology in 1998

Technology	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	219	215	206	154	65	37	37
Finished without PhD degree	12	15	21	22	23	23	23
Finished with PhD degree	0	1	4	55	143	171	171
National total	231	231	231	231	231	231	231

Technology	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	95%	93%	89%	67%	28%	16%	16%
Finished without PhD degree	5%	6%	9%	10%	10%	10%	10%
Finished with PhD degree	0%	0%	2%	24%	62%	74%	74%
National total	231	231	231	231	231	231	231

General overview of Danish PhD students. 1998. No. of individuals.

Altogether, 258 PhD students initiated studies in Medicine in 1998

Medicine	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	257	251	243	184	66	31	30
Finished without PhD degree	1	6	9	17	19	19	19
Finished with PhD degree	0	1	6	57	173	208	209
National total	258	258	258	258	258	258	258

Medicine	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	100%	97%	94%	71%	26%	12%	12%
Finished without PhD degree	0%	2%	3%	7%	7%	7%	7%
Finished with PhD degree	0%	0%	2%	22%	67%	81%	81%
National total	258	258	258	258	258	258	258

General overview of Danish PhD students. 1998. No. of individuals.

Altogether, 101 PhD students initiated studies in Agricultural and Veterinary Sciences in 1998

Agricultural and Veterinary Sciences	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	101	98	94	59	27	13	13
Finished without PhD degree	0	2	2	5	5	6	6
Finished with PhD degree	0	1	5	37	69	82	82
National total	101	101	101	101	101	101	101

Agricultural and Veterinary Sciences	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	100%	97%	93%	58%	27%	13%	13%
Finished without PhD degree	0%	2%	2%	5%	5%	6%	6%
Finished with PhD degree	0%	1%	5%	37%	68%	81%	81%
National total	101	101	101	101	101	101	101

**General overview of Danish PhD students. 1998. No. of individuals.
 Altogether, 137 PhD students initiated studies in Social Sciences in 1998**

Social Sciences	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	137	126	125	98	56	36	36
Finished without PhD degree	0	10	10	17	23	26	26
Finished with PhD degree	0	1	2	22	58	75	75
National total	137	137	137	137	137	137	137

Social Sciences	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	100 %	92%	91%	72%	41%	26%	26%
Finished without PhD degree	0%	7%	7%	12%	17%	19%	19%
Finished with PhD degree	0%	1%	1%	16%	42%	55%	55%
National total	137	137	137	137	137	137	137

**General overview of Danish PhD students. 1998. No. of individuals.
 Altogether, 185 PhD students initiated studies in Humanities in 1998**

Humanities	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	182	176	172	135	81	51	49
Finished without PhD degree	1	6	10	32	45	55	56
Finished with PhD degree	2	3	3	18	59	79	80
National total	185	185	185	185	185	185	185

Humanities	1998	1999	2000	2001	2002	2003	2004
Years of study	0	1	2	3	4	5	6
Ongoing	98%	95%	93%	73%	44%	28%	26%
Finished without PhD degree	1%	3%	5%	17%	24%	30%	30%
Finished with PhD degree	1%	2%	2%	10%	32%	43%	43%
National total	185	185	185	185	185	185	185

General overview of Danish PhD students. 2001. No. of individuals.

Altogether, 229 PhD students initiated studies in Natural Sciences in 2001

Natural Sciences	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	226	224	216	216
Finished without PhD degree	3	4	8	8
Finished with PhD degree	0	1	5	5
National total	229	229	229	229

Natural Sciences	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	99%	98%	94%	94%
Finished without PhD degree	1%	2%	3%	3%
Finished with PhD degree	0%	0%	2%	2%
National total	229	229	229	229

General overview of Danish PhD students. 2001. No. of individuals.

Altogether, 196 PhD students initiated studies in Technology in 2001

Technology	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	191	187	180	180
Finished without PhD degree	5	8	14	14
Finished with PhD degree	0	1	2	2
National total	196	196	196	196

Technology	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	97%	95%	92%	92%
Finished without PhD degree	3%	4%	7%	7%
Finished with PhD degree	0%	1%	1%	1%
National total	196	196	196	196

General overview of Danish PhD students. 2001. No. of individuals.

Altogether, 282 PhD students initiated studies in Medicine in 2001

Medicine	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	279	276	267	267
Finished without PhD degree	1	3	7	7
Finished with PhD degree	2	3	8	8
National total	282	282	282	282

Medicine	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	99%	98%	95%	95%
Finished without PhD degree	0%	1%	2%	2%
Finished with PhD degree	1%	1%	3%	3%
National total	282	282	282	282

General overview of Danish PhD students. 2001. No. of individuals.

Altogether, 73 PhD students initiated studies in Agricultural and Veterinary Sciences in 2001

Agricultural and Veterinary Sciences	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	73	71	67	67
Finished without PhD degree	0	1	3	3
Finished with PhD degree	0	1	3	3
National total	73	73	73	73

Agricultural and Veterinary Sciences	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	100%	97%	92%	92%
Finished without PhD degree	0%	1%	4%	4%
Finished with PhD degree	0%	1%	4%	4%
National total	73	73	73	73

General overview of Danish PhD students. 2001. No. of individuals.
Altogether, 167 PhD students initiated studies in Social Sciences in 2001

Social Sciences	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	165	156	144	144
Finished without PhD degree	2	10	18	18
Finished with PhD degree	0	1	5	5
National total	167	167	167	167

Social Sciences	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	99%	93%	86%	86%
Finished without PhD degree	1%	6%	11%	11%
Finished with PhD degree	0%	1%	3%	3%
National total	167	167	167	167

General overview of Danish PhD students. 2001. No. of individuals.
Altogether, 153 PhD students initiated studies in Humanities in 2001

Humanities	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	150	147	143	143
Finished without PhD degree	1	3	6	6
Finished with PhD degree	2	3	4	4
National total	153	153	153	153

Humanities	2001	2002	2003	2004
Years of study	0	1	2	3
Ongoing	98%	96%	93%	93%
Finished without PhD degree	1%	2%	4%	4%
Finished with PhD degree	1%	2%	3%	3%
National total	153	153	153	153

Appendix 7.

PhD degrees in the Nordic countries 1990-2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	411	536	598	717	765	796	826	958	947	990	1 008	1 024	1 026	1 073	1 055
Finland	490	523	524	648	701	758	851	934	988	1 164	1 156	1 206	1 223	1 257	1 399
Iceland	1	-	3	4	-	3	1	4	3	3	5	4	6	9	10
Norway	393	415	439	491	551	602	602	625	685	695	646	677	739	723	782
Sweden	1 095	1 180	1 279	1 251	1 504	1 520	1 682	1 801	1 929	2 148	2 176	2 413	2 476	2 701	2 741
Total	2 390	2 654	2 843	3 111	3 521	3 679	3 962	4 322	4 552	5 000	4 991	5 324	5 470	5 763	5 987

Source: NORBAL

PhD degrees per million inhabitants in the Nordic countries 1990-2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	80	104	116	138	147	152	157	181	179	186	189	191	191	199	195
Finland	98	104	104	128	138	148	166	182	192	225	223	232	235	241	268
Iceland	4	-	11	15	-	11	4	15	11	11	18	14	21	31	34
Norway	93	97	102	114	127	138	137	142	155	156	144	150	163	158	170
Sweden	128	137	148	143	171	172	190	204	218	242	245	271	277	302	305
Total	103	114	121	132	149	155	166	180	190	208	207	220	225	236	244

Source: NORBAL

PhD degrees in the Nordic countries by scientific area, 1990-2004

Scientific area	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Humanities	219	269	296	303	311	320	363	392	464	506	500	568	600	618	636
Social Sciences	302	319	345	362	444	494	531	578	719	744	734	839	873	932	944
Natural Sciences	606	658	707	713	892	913	981	1 059	1 079	1 077	1 114	1 147	1 177	1 260	1 290
Technology	373	431	561	614	700	728	742	837	823	912	844	944	1 010	1 095	1 202
Medicine	760	827	801	948	998	1 045	1 176	1 224	1 262	1 512	1 550	1 554	1 540	1 591	1 652
Agricult. & Vet. Sci.	130	150	133	171	176	179	169	232	205	249	249	272	270	267	263
All areas	2 390	2 654	2 843	3 111	3 521	3 679	3 962	4 322	4 552	5 000	4 991	5 324	5 470	5 763	5 987

Source: NORBAL

PhD degrees in the humanities in the Nordic countries 1990-2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	54	73	85	86	70	68	106	94	119	141	118	109	139	145	150
Finland	53	55	50	64	80	82	85	110	106	124	141	144	134	139	155
Iceland	1	-	2	1	-	1	-	1	1	-	2	-	2	2	1
Norway	21	32	25	38	40	46	52	58	78	58	67	78	86	72	88
Sweden	90	109	134	114	121	123	120	129	160	183	172	237	239	260	242
Total	219	269	296	303	311	320	363	392	464	506	500	568	600	618	636

Source: NORBAL

PhD degrees in the social sciences in the Nordic countries 1990–2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	42	46	58	57	63	71	76	73	91	104	103	112	113	115	119
Finland	79	75	80	105	111	149	156	171	195	241	227	251	252	268	307
Iceland	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1
Norway	43	44	59	61	87	95	109	106	124	119	117	110	132	159	143
Sweden	138	154	148	139	183	179	190	228	309	280	287	365	375	390	374
Total	302	319	345	362	444	494	531	578	719	744	734	839	873	932	944

Source: NORBAL

PhD degrees in the natural sciences in the Nordic countries 1990–2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	102	147	149	164	176	209	195	233	211	217	215	215	212	216	197
Finland	131	117	116	121	176	168	202	201	209	239	243	222	282	252	304
Iceland	-	-	-	-	-	-	-	1	-	-	1	-	-	3	4
Norway	109	114	133	136	149	146	169	177	199	179	171	178	167	182	184
Sweden	264	280	309	292	391	390	415	447	460	442	484	532	516	607	601
Total	606	658	707	713	892	913	981	1 059	1 079	1 077	1 114	1 147	1 177	1 260	1 290

Source: NORBAL

PhD degrees in technology in the Nordic countries 1990–2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	79	130	140	176	198	198	159	212	178	183	194	186	194	227	201
Finland	49	80	93	94	114	125	130	150	151	190	161	205	206	226	256
Iceland	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-
Norway	96	75	92	125	120	123	119	128	130	121	124	113	135	102	123
Sweden	149	146	236	218	268	282	334	347	364	418	365	439	475	540	622
Total	373	431	561	614	700	728	742	837	823	912	844	944	1 010	1 095	1 202

Source: NORBAL

PhD degrees in medicine in the Nordic countries 1990–2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	94	92	129	182	198	188	241	260	286	273	304	305	283	277	289
Finland	156	171	157	232	195	207	249	264	279	319	328	331	299	316	326
Iceland	-	-	1	2	-	2	1	2	2	3	2	2	3	4	4
Norway	90	106	97	92	111	151	120	115	115	183	135	151	154	158	189
Sweden	420	458	417	440	494	497	565	583	580	734	781	765	801	836	844
Total	760	827	801	948	998	1 045	1 176	1 224	1 262	1 512	1 550	1 554	1 540	1 591	1 652

Source: NORBAL

PhD degrees in agricultural and veterinary sciences in the Nordic countries 1990–2004

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Denmark	40	48	37	52	60	62	49	86	62	72	74	97	85	93	99
Finland	22	25	28	32	25	27	29	38	48	51	56	53	50	56	51
Iceland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Norway	34	44	33	39	44	41	33	41	39	35	32	47	65	50	55
Sweden	34	33	35	48	47	49	58	67	56	91	87	75	70	68	58
Total	130	150	133	171	176	179	169	232	205	249	249	272	270	267	263

Source: NORBAL

Appendix 8.

Evaluation of Danish PhD Education - themes for self-evaluation

1. Institutional framework of the PhD education

First, the institution is asked to describe briefly the institutional framework of the PhD education. This should include:

- 1.1 A description of the PhD education profile.
- 1.2 A description of the decision-making structure in relation PhD education. As part of this, a description of the PhD students' influence on and participation in planning, evaluation and decision making.
- 1.3 Considerations concerning the link between the basic training and PhD programmes within the institution.
- 1.4 Considerations about the value of the PhD programme in relation to the overall education and research activities within the institution.
- 1.5 Considerations about the appropriateness of the PhD programmes, both in terms of content and administration.
- 1.6 Considerations regarding the value of graduate schools, networks and centres as a means for developing and improving research training.
- 1.7 A description of the deliberations that have occurred in relation to graduate schools. As part of this, issues concerning organisation and financing.
- 1.8 Some institutions make use of the so-called 4+4 model (4 years for a BA and a Master's degree, 4 years for a PhD). If this model has been used, the institution is asked to explain the advantages and disadvantages of this model.
- 1.9 Discussion about whether or not it is considered appropriate to have common rules concerning the framework for PhD education, for instance, concerning course activities and visiting appointments in other research communities.
- 1.10 Considerations about how the institution foresees the possibilities for the development of the PhD education within the current legal and financial framework.
- 1.11 Considerations regarding how the institution prepares for future challenges (e.g., generational change, demands for international mobility, developments in the labour market for PhDs, the Bologna process etc.). What does the institution do to collect experiences to be used for meeting future challenges?

2. The individual elements in the PhD education

- 2.1 Who is responsible for working out the PhD students' individual PhD plans? How does the institution make sure that the PhD students meet the demands of the PhD plan?
- 2.2 To what extent do the PhD students attend courses, and what is the proportion of these courses offered by the institution itself compared to other institutions?
- 2.3 What is the value and relevance of these course activities to the PhD education?
- 2.4 What are the demands for PhD courses in terms of content and organisation and who approves the courses? Are any of the courses compulsory?

- 2.5 Describe the character and duration of PhD students' stays in other research communities during their PhD studies. What is the value of these stays?
- 2.6 Are the PhD students' stays in foreign countries typically in research communities with which the institution already cooperates?
- 2.7 Describe the extent and relevance of the PhD students' teaching activities. What measures have been taken by the institution to enhance the PhD students' teaching skills?
- 2.8 Describe the extent and relevance of the PhD students' participation in seminars and conferences.
- 2.9 Is the time frame for the dissertation research sufficient? Considerations on how to facilitate a constructive interplay between the dissertation research, courses offered, the PhD student's own teaching duties and stays at foreign institutions.

3. Specific quality dimensions

- 3.1 Describe and analyse the admission of PhD students to the programme. The description should include considerations regarding admission demands and recruitment practices of the institution.
- 3.2 What proportion of applicants and admitted students comes from other universities in Denmark? What share of applicants and admitted students comes from other countries – among these from Scandinavia, Europe and others?
- 3.3 Is there a correlation between the applicants' geographical and institutional backgrounds and the quality of the PhD education?
- 3.4 Does the institution have problems recruiting PhD students as a result of its admission demands? Does the institution have enough applicants from other universities and countries? Focusing especially on the last five years, have there been changes in the quality level of applicants to the PhD programme since the implementation of the PhD reforms?
- 3.5 What is the policy of the institution concerning the advertising of PhD stipends (professional breadth and breadth in the advertisement itself) and the selection of PhD students?
- 3.6 How does the institution assess the professional level of externally and internally financed PhD students?
- 3.7 Considerations on transition frequencies – understood as the share of one year's graduates who choose to continue in a PhD programme.
- 3.8 What other procedures for quality provision does the institution have concerning the PhD programmes at the institution (measures such as initiatives towards the development of the institution; the PhD students' potential for influence, e.g., evaluation of courses; evaluations and follow-up on these; national and international comparisons)?
- 3.9 Do the particular study programmes within the institution have strategies for intensifying cooperation with relevant foreign research training communities?
- 3.10 How many applicants for the advertised PhD stipends did the institution have in the calendar years of 2003 and 2004? (As the stipends can be advertised both singularly and in groups, the mode of advertisement should be clearly defined. The specification should not include externally financed stipends. As a minimum, the number of (Danish and foreign) applicants for the particular stipends is asked for in "netto" figures, so that an applicant is only counted once.) How many of these applicants were rejected due to a lack of PhD stipends and how many were rejected due to professional reasons?

4. Guidance

Describe and analyse the guidance of the PhD students. Considerations on the following elements should be included in the description:

- 4.1 Does the institution offer courses for the instructors of the institution, e.g. courses in teaching, specifically focused on the guidance of PhD students?
- 4.2 How is the total amount of guidance resources distributed?
- 4.3 What procedures for quality provision does the institution have for guidance and for the instructors?
- 4.4 How does the institution ensure internal guidance in cases where the PhD student accomplishes large parts of his/ her studies outside the institution?
- 4.5 Do evaluations every six months work satisfactorily? Are the evaluations used to stop PhD students that are judged not to be qualified for the PhD degree? If so, how often does this happen?
- 4.6 Does the external guidance work satisfactorily?
- 4.7 What possibilities of acting independently on this matter does the institution have? Are these possibilities sufficient? Do limits hereto influence the quality of the PhD education?

5. Financing

- 5.1 Does the current arrangement of financing satisfy its purpose?
- 5.2 Are there specific circumstances of the administration and the financial management of the PhD system that need to be stressed?
- 5.3 What is the policy of the institution concerning the collection of the suggested PhD education charges for externally financed PhD students (DKK 132,900 for experimental education and DKK 88,500 for non-experimental education, according to the Budget for 2006)?
- 5.4 How are the PhD students of the institution/faculty (using a rough estimate) distributed concerning sources of financing - specified for the number of enrolled students in 2003 and 2004? The specification is asked to distinguish between:
 - Percentage of PhD students financed by the institution itself
 - External funds from:
 - The councils of research and the Danish National Research Foundation
 - Government research institutions
 - Hospitals and other funds from regional and local governments
 - Other public funds
 - Private funds, non-profit organisations, grants, etc.
 - Danish companies
 - Foreign companies and other foreign funds
- 5.5 Over time, have there been shifts in the proportion of the sources of financing?
- 5.6 How does the institution ensure that there are sufficient funds for the items of expenditure (courses, operating costs, conferences, stays abroad etc.) necessary for every PhD student's education?
- 5.7 Does the institution internally use a specific economic basis of distribution, and, if so, which one?
- 5.8 Is there a correlation between the quality of a PhD course of study and its source of finance - for example differences in quality of self-financed and externally financed PhD course of studies?

6. Productivity

- 6.1 According to the institution, is there a fair relation between the number of admitted PhD students and the number PhD degrees conferred? Please specify the figures of the last year.
- 6.2 Have special procedures been adopted concerning PhD students who, in spite of a long course of study, are not close to the termination of their programme?
- 6.3 Are there special reasons for PhD students dropping out early in their studies? late in their studies?
- 6.4 Are there specific circumstances concerning the assignment of PhD degrees without a preceding course of study that need to be stressed?

7. Labour market for PhDs

- 7.1 Does the institution have measures for tracking PhD students' experiences on the labour market after they have completed their degrees? If so, for how long has the institution had such measures? And what is the estimated value of these measures?
- 7.2 According to the institution, are the different sectors' (including the university's) requirements for PhD graduates in sufficient conformity with the production of PhDs (the dimension of the education)?
- 7.3 Is the institution able to compete with other employers on the private and the public labour market concerning the attraction of desired PhD graduates? If not, what are the reasons?
- 7.4 What instruments does the institution use to assess whether the quality of PhD graduates is in conformity with the employers' needs?
- 7.5 Are there - compared to Master degree holders - special, labour market oriented needs that are met by the PhD graduates?

8. The dissertation

- 8.1 Describe the guidelines for the design and content of dissertations.
- 8.2 Are there special circumstances concerning demands on and tradition for publishing?
- 8.3 Besides chapter 6 and 7 of the PhD Order, is there a set of rules concerning the assessment of the PhD dissertation (concerning the following phases: designating the evaluation committee, the evaluation period itself, the period of advertisement, the period from the dissertation defence to the assignment of the PhD degree)? If so, what are the experiences concerning the application of this set of rules?
- 8.4 What is the practice concerning the possibility of changing the dissertation before the final evaluation?
- 8.5 What is the practice of the institution concerning the composition of the committees evaluating the PhD dissertations? To what extent do the evaluation committees have international members?
- 8.6 What role does the PhD defence play compared to the evaluation of the dissertation - for example, is the defence primarily a presentation or is an evaluation of the defence included in the final evaluation?
- 8.7 What is the institution's estimation of the externally and internally financed PhD dissertations, respectively?
- 8.8 What is the institution's estimation of the quality of the PhD dissertations produced at the institution compared to an international level? On what grounds is this estimation built?

9. PhD students' social relationships

- 9.1 Which organisational settings support the cooperation between PhD students?
- 9.2 Is particular attention given to the equality between the sexes? If so, describe how? Are special measures taken to ensure gender equality? Which measures? Are these measures appropriate? Is there a correlation between gender and the quality of the research training? Why/why not?
- 9.3 How does the institution work with issues concerning ethnic and social diversity in the research training? Is there a correlation between these issues and the quality of the research training? Why/why not?
- 9.4 Has the institution taken special initiatives to counter problems not associated with the PhD programme itself that can render difficult or delay the PhD student's education (issues related to pregnancy, accommodation etc.)?
- 9.5 What is the policy of the institution concerning making it attractive for foreign students to become PhD students at the institution - besides purely educational programme aspects?
- 9.6 How many foreign PhD students stayed at the institution in 2003 or 2004 for at least three months as a guest student - i.e., not being enrolled for a full PhD education in Denmark?

10. Concluding analysis of the PhD education

To the extent it is not already included in the descriptions in themes 1-9, the institution is asked to make a concluding analysis of the PhD education, including:

- 10.1 The institution's strengths and weaknesses.
- 10.2 Good examples to be emphasised.
- 10.3 Opportunities and limitations in the current research system.
- 10.4 Expected changes in the near future.
- 10.5 e.g., suggestions for changes.