

Post-graduate Programmes in Germany and Finland

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On researcher training in Finland

An overview and certain special characteristics

At first sight, the Finnish system of researcher training may seem very uniform. This image is even more apparent, when the Finnish system is compared, for instance, with the German system, or with others internationally. In Finland, all universities apply similar regulations relating to postgraduate studies. The quality standards of the doctoral degrees are comparable as well. The Finnish universities are on a par, and there are no significant differences in the way their doctoral degrees are valued in the labour market, either. Even the requirements set for completing a doctoral degree seem to differ very little between disciplines. It is, however, rather difficult to measure this in a reliable way.

However, all this looks very different in the eyes of someone working within the Finnish researcher training system – for example a doctoral student or her or his supervisor. The system is hardly uniform, partly because of the structure of research funding, and partly owing to the traditional, almost ancient practices, some of which remain even after the alterations that have taken place in the postgraduate training during the past ten to twelve (10-12) years.

In Finland, doctoral degrees can only be completed within the faculties of the universities. The faculties have a right to decide the criteria according to which they select their postgraduate students. The selection criteria vary between faculties and departments. However, some similarities do exist. Most faculties have a special board of professors which is responsible for selecting the doctoral candidates. In most cases the applicant needs at least good marks in his or her Master's thesis, and a recommendation of a professor within the discipline. The prospective student also needs to have an appointed supervisor. Having a funding for the research work is not required, which is the case in postgraduate selection for instance in Sweden.

The universities, and in practice the departments, carry the main responsibility for organising research training and guidance. A doctoral candidate has one main supervisor, and possibly other supervisors, but seldom more than two. The main supervisor is on the one hand responsible for not letting an incomplete dissertation manuscript to be submitted for evaluation, and on the other for not allowing the thesis evaluation process to be delayed unnecessarily. The system of several supervisors is often used in such disciplines that carry out their research in research groups. Some of the graduate programmes have an external guidance group, which meets once or twice a year to evaluate the progress the doctoral candidates have made in their studies.

The pre-examiners of the doctoral dissertation are impartial experts appointed by the university. They assess whether the thesis manuscript can be accepted as a doctoral dissertation. The pre-examiners either grant or deny the doctoral candidate the permission to defend the dissertation at a public examination. In the public examination the candidate has to respond to criticism, and to

defend the outcome of his or her research. The doctoral candidate has to be able to evaluate the importance of the findings in the context of the discipline.

The following figures present the changes within the postgraduate training system during the past fifteen years. The number of doctoral degrees has increased a great deal, but during the past few years the situation has normalised. To be able to weigh up these numbers, ladies and gentlemen, you should bear in mind that there are five point two (5.2) million people in Finland. To compare these figures with the situation in Germany, you need to multiply them by fifteen. Using this ratio when comparing the German numbers with these Finnish figures means that there ought to be twenty two thousand (20.000) new doctoral degrees in Germany every year.

- Year: 1991 1995 2000 2003 2006
- University graduates: 8.410 11.819 11.515 12.411 13.128
- Postgraduate students: 11.839 15.927 20.537 22.960 21.899
- Doctoral degrees: 524 765 1.156 1.257 1.409

In the late nineteen eighties (1980's) only a small share of the Finnish postgraduate students was able to work on their doctoral studies full-time. Most of them worked as assistants in the departments and taking care of many administrative duties and teaching, funded their work with research grants, or studied only part-time. The last-mentioned were the great majority of all doctoral students at that time.

The present Finnish graduate programme system was founded in nineteen ninety five (1995). Its funding comes from the Ministry of Education, the universities, and the Academy of Finland. The system has been expanding ever since, and the number of graduate programmes has doubled. From year two thousand and six (2006) onwards the system includes a hundred and twenty four (124) postgraduate programmes, in which more than four thousand (4.000) postgraduate students work full-time. The Finnish Ministry of Education funds the work of one thousand four hundred and fifty eight (1458) postgraduates; about three hundred (300) are supported by the Academy of Finland, and the others get their funding from universities and private foundations.

In a graduate programme a doctoral student can focus on the doctoral dissertation for four years; in research institutes the dissertation is finished alongside with other duties, hence the doctoral project will take more time. A doctoral student is an employee of the university, earning a fixed salary of one thousand seven hundred (1.700) euros per month (about one thousand three hundred [1.300] euros net, after taxes).

Many of the doctoral candidates work on a grant allocated to the projects of their supervisors, or on a personal scholarship. Most of the registered postgraduate students have no funding at all. Of the total number of twenty two thousand (22.000) doctoral candidates only one in four has a funding that enables a full-time doctoral work.

The postgraduate students can be divided into five groups according to their financing:

- Those in postgraduate programmes funded by the Ministry of Education and the Academy of Finland
- Those in postgraduate programmes funded by the universities or working in their researcher training positions
- Those working in research projects funded by the Academy of Finland
- Those working on scholarships provided by private foundations
- Those without funding, working alongside their full-time occupation

The doctoral students of the University of Helsinki working under my supervision, 40 in number, come from all these groups. Those working full-time comprise twenty five (25) per cent of the total amount; those working part-time are about as many. Approximately a half of all my doctoral students work full-time elsewhere, and fund their doctoral work with their own income.

The Academy of Finland holds a central position in the selection processes that are based on scientific quality assessment. It also allocates annually four (4) million euros for the postgraduate programmes. This funding is used for researcher training courses, programme coordination, and international cooperation. The Ministry of Education for its part gives the postgraduate programmes more than forty (40) million euros annually. The Ministry also provides capital for the hiring of an administrative coordinator for twenty three (23) of the graduate schools. Some of the coordinators are funded by the universities.

The researcher training positions in the universities and research institutes are also an important way to completing a doctoral degree. For instance the University of Helsinki at present provides for sixty (60) doctoral candidates working in such positions from its own funds. These funds are allocated for such disciplines that for some reason have no postgraduate programmes of their own.

Most of the research projects funded by the Academy of Finland employ doctoral students for full-time jobs. The funding provided by private foundations is also of consequence. Almost seventy (70) per cent of the doctoral candidates that completed their dissertation in the year two thousand (2000) reported that they had been working on a scholarship at some point of their doctoral work. The research institutes which do not operate within universities also play a significant role in the activities of the postgraduate programmes. In the beginning of the year two thousand and six (2006), forty two (42) of the one hundred and twenty four (124) postgraduate programmes cooperated with a research institute. For instance the FinBioNet –network of biosciences and medicine comprises of thirty two (32) postgraduate programmes, most of which are in close connection to one or more state research institutes.

It is difficult to focus on the doctoral studies, if one cannot be sure of the continuity of the funding, or if its structure keeps changing. In many cases, the funding given is not sufficient to cover the whole of the doctoral work. There is one exception to this rule, which is the financing provided by the Ministry of Education. Some of the doctoral students live in a situation in which scholarships, phases of university employment, other types of work, and possibly even unemployment vary. The pension plans of the doctoral students working with research grants are only fully covered from the beginning of the year two thousand and seven (2007). If a student becomes unemployed while working on the thesis, it is still not completely clear that he or she is able to receive standard unemployment benefits.

Either way, the establishment of the postgraduate programme system has been a very remarkable and mainly successful reform. The founding of postgraduate programmes has given doctoral training more orderliness and effectiveness. Doctoral training is now more dynamic, and the cooperation between universities and departments has taken new forms. Postgraduate programmes have brought along a new way of doctoral training, which has become, or is at least going to become, a central way of completing a doctoral degree. However, by the year two thousand and five (2005) only ca. two thousand (2.000) doctoral degrees were completed within the graduate schools, which was merely one fourth of all the doctoral degrees completed between the years two thousand (2000) and two thousand and five (2005).

The postgraduate programmes do not aim at increasing the number of doctoral degrees. Their main target is to train professional researchers and specialists. Those completing their degree have to be able to work on assignments, in which the scientific approach adds value to professional qualification. Postgraduate programmes are also expected to give the students other expertise; they learn to work in a group, to popularise research results, to run research projects, and to work in international circumstances.

Becoming a sovereign member of the scientific community forms a significant part of the doctoral training. This position is primarily gained by publishing, presenting, and standing for one's own research results. Regularly arranged seminars of the department or some other type of research community, as well as research training courses of the postgraduate programmes, or international conferences give a doctoral student a chance to learn scientific communication and argumentation. International conferences and research cooperation bring the doctoral students into the international scientific community. This way the postgraduate programmes hold a key to the internationalisation of doctoral training. International cooperation is also furthered when foreign students take part in the postgraduate programmes. By the year two thousand and twelve (2012) one fifth of the doctoral students are expected to come from outside Finland.

Some official guidelines have been given for recruiting students to those of the postgraduate programmes that are funded by the Ministry of Education. The postgraduate positions have to be open to all. However, it is absolutely necessary that each applicant has – or will have – a postgraduate status in a university. Competition for the positions in the postgraduate programmes is tough, and in certain disciplines even tougher than in others. In humanities as well as in social sciences only one applicant in ten gets a position. There were a hundred and twelve (112) applicants when the Finnish Graduate School of History last had positions available – and only eight (8) new students were accepted. Getting a private scholarship is at least as hard, because of the large number of doctoral candidates. There are for instance more than seven hundred (700) doctoral students in the discipline of history.

At present the postgraduate programmes in Finland comprise of following fields:

- Biosciences and environmental sciences (fifteen per cent) (15 %)
- Cultural and social studies (twenty four per cent) (24 %)
- Medicine (seventeen per cent) (17%)
- Natural and technical sciences (forty four per cent) (44 %)

The postgraduate programmes are hardly uniform. Some of them are national, focusing on one discipline; some are local and consist of doctoral students of one university or many universities in this locality; some are rather extensive national networks. Their work varies according to their field of research. In natural sciences, doctoral studies are often carried out in a group, and the doctoral dissertation is composed of scientific articles. In such cases the doctoral students may work with others in the same situation even daily. In humanities, a postgraduate programme often operates much less regularly. For instance, the Finnish Graduate School of History arranges one conference every year, and only has a limited amount of money for congress or research travel expenses. Most of the tuition and guidance takes place at the university departments.

Those completing their doctoral degree in a postgraduate programme are on an average 30 years of age. This is rather young, since according to the Finnish national statistics a doctoral degree is usually completed at the age of 36 on an average. There are, however, great differences between disciplines. In natural sciences the doctoral candidates finish their studies when less than 35 years of age, whereas in social sciences and humanities the students complete their degrees at the average age of 40. In educational science the average is no fewer than 44 years. The significance of a doctoral degree varies between these disciplines, which should be taken into account when comparing these figures. In natural sciences a doctoral degree is a prerequisite for a research career, whereas a degree in educational science mainly brings additional qualifications to one's teaching occupation.

A constant problem in the Finnish researcher training system is the lack of tuition resources. When the postgraduate programmes were established 12 years ago, no new resources were given out to guidance and administration. Many of the supervisors have far too many students. I, for instance, have been the supervisor of forty (40) doctoral students simultaneously. They are not all active at the same time, but if even half of them need guidance two or three times every month, their professor has certainly earned his salary. The great number of postgraduates results from the Finnish system. Once a student has received a right to study for a doctoral degree, this right cannot be taken away. When I was appointed to my current position twelve (12) years ago, I inherited about thirty (30) doctoral students from my predecessor. Most of them have already completed their degree, but a few of the originals still remain. The University of Helsinki is at present undergoing a process, in which the students that have held the postgraduate status for more than seven years are asked to renew their research and study plans. With this process the university wishes to help those, who do not really have the chance to complete their degree, notice their situation and draw the necessary conclusions.

A career in research is very popular in Finland. Even the tough competition or the constant insecurity of funding and employment does not seem to scare the young people hoping to make their way in the field of research. In my view, it would be important to give them a more accurate picture of the career opportunities, since one should be able to make a living also after completing the doctoral degree. During the past years, the Academy of Finland, the universities, and some of the private foundations have emphasised the support given to the post doc –phase in the researcher career.

The University of Helsinki has recently introduced a new, four-level structure of university posts. This will harmonise the official titles, and depict the researcher career in a more clear way. The first level consists of the postgraduate students, regardless of their funding. Their title is *doctoral student*. The *postdoctoral researchers* spend three to five years on the second level. On the third level, the researchers work as *university lecturers*. To enter such post, a researcher needs several years of experience in academic research and tuition. The fourth level consists of *professors*.