

# CENTRAL EUROPE

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## POSTGRADUATE EDUCATION AND QUALITY

### PROBLEMATICS ON THE QUALITY ASSESSMENT AND THE OUTCOME OF PHD TRAINING

In this article, first, an overview will be given on the development of the graduate school system in Finland. Secondly, the article looks at the problematics on the quality of postgraduate education, its evaluation as well as funding systems. Thirdly some characteristics of the labour market situation for PhDs are presented and lastly the purpose of the postgraduate training will be rethought. Although focusing mainly on the Finnish postgraduate system the article will refer to similar problems and prospects in some other countries.

Problems of the Finnish postgraduate system: are graduate schools a solution?

In the early 1990s, with increased internationalisation and student mobility after joining the EU, the Ministry of Education noticed that the Finnish postgraduates had difficulties in competing with their European counterparts both for international grants as well as for work placements after completing their PhD. PhDs were simply too old; the median age at dissertation was about 37 years. The relatively high age had also been noticed at least in two OECD reports, first in 1986 and later in 1994. Situation of the same kind was also prevailing in the German postgraduate education when they created the graduate colleges in 1990. One motivation was indeed to shorten the time that it took to complete the doctorate, because the German graduates were already quite old at the starting point of their doctoral studies, on an average 28 years old. The preparation of a doctoral thesis was expected to take 4–5 years, sometimes even longer (*Baldauf 1998*).

However, there were other reasons for changing the old Finnish postgraduate system and one of them was the need of qualified staff in some disciplines (e.g. languages, law, educational sciences) for the institutions of higher education (*Kivinen et al 1997*). Also the new knowledge-intensive fields would need highly educated manpower in the future. Finland's educational and research strategies for the future are based on a vision of the "information society" and PhDs—with their work and innovations—are expected to lead to the realisation of it (*Kivinen & Abola 1999a*).

One solution to these problems was hoped to be found in the introduction of a graduate school system, which was adopted from the United States and largely adapted to the Finnish needs.

### The Finnish graduate school system

The new system was introduced in 1995 and at the moment it comprises of 100 graduate schools, some of them national, some including only a single university. They cover about 30 %

of the postgraduate students and the rest are still working on their dissertation in a traditional way like, for instance, by being employed as a research assistant at the university and working part-time on the thesis. The new system has given financing for full-time studies to a growing number of students.

Following goals were set for the graduate schools:

- “Increase of quality in research and researcher training
- Decrease of age at disputation
- Improvement of quality of tutoring
- More effective training
- Postgraduate studies completed in 4 years
- Networking of universities, research institutions and industry
- More international contacts
- Increase in number of doctors.” (*MoE 1999b*)

Even though the reasons for establishing the graduate schools were mainly practical and easily to be measured (more and younger PhDs) the goals enumerated above emphasise also effectiveness and quality. The quantitative goals are already reached as we will see later in this article but one of the main problems at the moment is how to assure and measure quality.

### Postgraduate Education and the Quality Assessment

Evaluation of universities is almost as old a tradition as the universities themselves, but the evaluation has not been regular and visible for long. It has been unsystematic, and conducted only exceptionally (*Maassen 1997*). Because the universities are nowadays practically autonomous what comes to organising their activities: teaching, research and administration — including the organising of postgraduate training— the quality assessment is a necessity from the governments point of view who, as providers of funding, want to assure the quality of the universities’ output for exchange of the freedom given when using the resources. However, they are not the only ones demanding accountability from the universities; students as “clients”, employers as the users of the output and providers of external funding will demand quality assurance (*Maassen 1997*). Another factor that will push towards the quality assessment is the massification of the higher education. According to Gibbons et al. (*1994*) the continuous flow of trained manpower from the universities to the industrial system will result in a diffusion of the knowledge production and, as they foresee, the position of institutions of higher education as the leading producers of knowledge will weaken in the future. For a different reason, they have, however, come to a similar conclusion as Maassen that accountability, or “the social demand for quality, performance and value for money — now involves a complex social process of legitimation.” (*ibid.*)

Discussions about the quality assessment have been conducted in the context of higher education in general but can be applied to postgraduate education as well. If we look at the funding mechanisms behind the postgraduate training we notice that they include not only states, even though they still are the main funding sources, but also industry, firms, academies, private institutions and individuals as well as international sources like the EU-programmes. The accountability towards all these will have to be both in quantity and in quality.

What does the concept of quality mean in the context of higher education? I will lean on the five categories (*see Harvey & Green 1993; Kivinen 1997; Kristensen 1999*) for defining quality: exception, perfection, fitness for purpose, value for money and transformation. Each of these definitions could be examined at least from the point of view by four different inter-

est groups,<sup>1</sup> but this article will not take such a detailed approach. With at least the last three definitions in mind we may move on to funding and employment issues.

### Performance-based funding — competing for “crumbs”?

The performance-based funding was introduced in the Finnish university funding in 1988, being at the time only 0.5 % of the total expenditure. At the moment it represents 3 % of the universities total budget funding, excluding external financing. It has been one motor for the changes in the universities' activities towards more efficient production of degrees and credits as well as that of publications — but not the only one.<sup>2</sup> Internationalisation and funding of the Academy of Finland are also among the criteria on the basis of which the 3 % of funds are distributed.<sup>3</sup> Although the sums are small they have motivated university departments to a competition. Because the majority of the funding criteria are those measuring quantity (credits or degrees) there is a danger that will lead to an under-valuation of quality.

The Ministry of Education has already noticed the danger and proposes in the draft for “Developing the universities funding system” that the quality must have more value among the result criteria for performance-based funding. Until now it has carried little weight partly because of the difficult comparability of the quality indicators which are being developed constantly. According to the draft-plan of the Ministry of Education for the period of 2001–2003 the performance-based quality indicators will include e.g. the centres of excellence for research (being the only indicator that measures the high *quality of research*, evaluated by peer review by the Academy of Finland), funding distributed by the Academy of Finland to the universities and other external funding. These funds have already been appropriated by competition (*MoE 1998*). A part of the performance-based funding will be distributed by *quality of education* including the units of high-standard education and adult education, selected by the Finnish Higher Education Evaluation Council, FINHEEC.<sup>4</sup> The selection criteria for the latter emphasise the following sectors:

- 1) Planning, objectives and contents of education (e.g. paying attention to employers' needs or how the education is connected to research)
- 2) Implementation of education (e.g. teaching methods and the use of learning technology)
- 3) Evaluation and development of education (e.g. noticing evaluations made by students)
- 4) Future visions of education and plans for developing education (*FINHEEC 1999a*)

Employment will also be among the funding criteria, but it will be examined later in this article. The competition for funds has given extra push for developing the evaluation systems both in the national and in the “grass-root level” within the universities, faculties and departments.

### Self-assessing quality: the case of the Faculty of Social Sciences

Since self-assessment is part of the modern university evaluation some quality assessment criteria for postgraduate training have also been set at faculty level. The faculty of Social Sciences of the University of Turku lists the following quality targets for postgraduates:

1 The business community, the state, the academic community and the population at large (Kivinen 1997: 446.)

2 Accountability in general and compiling of statistics has affected the universities activities to some extent.

3 The system is still new and it has been introduced gradually. For this reason, only 25 % of the 3 % share of performance-based funding is being distributed with the criteria mentioned and the 100 % will be reached by the year 2003. It is within the plans of the Ministry of Education that the percentage of performance-based funding will be raised from 3 % to 4 % in the next few years. (MoE 1998)

4 For further information on FINHEEC see: <http://www.minedu.fi/eopm/committees/finheec.html>

- he/she masters the discipline
- is capable to create new knowledge — is innovative
- is capable of independent and critical thinking and assessments

These quality targets are being followed by dissertation grades. Using a grading scale is estimated to reflect positively on the students' target setting. (Grading scales have always been used in the Finnish system) Also the employment of the postgraduates will be followed (*UTU 1999*).

Results of the self-assessment of the Faculty of Social Sciences show that the graduates have found their place on the labour market. However, the labour market seems to consist almost exclusively of the universities. The faculty paper states that those who work in the university of Turku during their postgraduate training will stay at the university and those who come from outside to give their dissertation will remain outside (*ibid.*). So far, the results do not mention anything about the three quality targets listed in the faculty paper. Obviously the evaluation methods need further developing.

### Evaluating the new graduate schools

The evaluation of the new graduate schools is still in preparation, because the first doctoral degrees from the graduate schools were awarded as recently as in 1998. An evaluation of the first four year round of graduate schools will be published at the end of this year. As far as we can read from one of the mid-reports the system seems quite successful: the new doctors will be younger when completing their thesis and their number is growing as expected. The quality of teaching and supervising seems good and the system worth continuing. Still, there are some problems that will have to be reconsidered such as too tight schedule or the students' low salary (*MoE 1997*). By the time the report comes out, more accurate results will be seen.

### Production of PhDs: value for money and fitness for purpose?

When we look at the cost-quantity ratio between input and output; how many doctors are produced with the resources invested we will notice that the Finnish postgraduate training is efficient, at least financially. The universities' budget funding has remained at the same level for a long time while the annual number of PhD degrees has almost tripled during the last ten years, from 368 in 1987 to 988 in 1998 (*KOTA*). Yet it must be remembered that the external funding has increased during and nowadays most postgraduates skip the licentiate degree between Masters and Doctors degrees. So both of these have had a positive effect in the growth of PhD numbers. Consequently, the quantitative goals, set by the Ministry of Education together with the universities,<sup>5</sup> have been exceeded well, but how long can this kind of situation go on before it debases the quality? (*Kivinen & Nurmi 1999*)

Burton R. Clark sees a differentiation of the universities as a means to promote quality with lower costs (*Clark 1992*). It is one asset of the US university system. "Rationalisation of production" could be developed to some extent in Europe but for many of the universities it would be difficult to give up the variety of disciplines and faculties since a "full-service" university has historical status value.

### PhDs and the world of work

For the moment the labour market prospects for the PhDs are still good, or at least so it seems. Even though the unemployment rate of the holders of postgraduate degree has been

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<sup>5</sup> For the four year period of 1995-1998 the target set was 726 doctoral degrees. (Source: KOTA).

steadily raising in the 1990s, being the highest in 1996 (2.7 %), it is still marginal compared to that of the Master's (5.4 % in the same year) not to mention the average unemployment rate (14.6 %). Since 1995 the average unemployment rate has been dropping as we can see from table 1 but those of the Masters and PhDs are expected to drop with some delay.

TABLE 1.  
*Unemployment rates (%) in Finland, 1990–1997*

Year	Postgraduate level	Master level	Average
1990	0.5	0.9	3.2
1991	0.8	2.0	6.6
1992	1.4	3.7	11.7
1993	1.8	5.1	16.3
1994	1.9	4.9	16.6
1995	2.0	4.3	15.4
1996	2.7	5.4	14.6
1997	2.6*	4.6*	12.7

\* Preliminary numbers

Sources: Statistics Finland 1999 (*MoE 1999a*)

The low unemployment rate could easily be interpreted as quality meaning that the universities' output matches the needs of the employers. However, it must be noted that the main employers of the PhDs are institutions of higher education (varying according to discipline from approximately 40 % for PhDs in social sciences to about 80 % for those of the educational sciences and law) while the proportion of industry and other employers is still marginal. From the main disciplinary fields only medicine makes an exception (only about 20 % are employed in the universities) because most medical doctors are employed in county hospitals and health centres. They are exceptional also in the sense that they are more often self-employed in their own practises (*Kivinen et al 1997; Arasmo 1998*). If universities and other institutions of higher education represent such a clear majority of the employers of PhDs then the match between employers and PhD output is not at all so good as it seems. On the contrary, the employer surveys —e.g. those conducted by RUSE in 1997— show that, actually, there is no real need for PhDs in the labour market outside universities. This is quite a sad picture because it is a fact that the universities are not able to absorb the ever growing number of PhDs but the new doctors will have to find employment outside the university.

Similar prospects for PhDs are seen in many of those countries where the number of postgraduates has been growing fast. That is the case, for example, in the UK where the demand for doctoral postgraduates is small and specialised and higher education is still the main employer of postgraduates (*Burgess et al 1998*). Yet, in countries like Portugal where both the higher education system, and research and development activities are still very much in a developing stage the supply of PhDs is not enough to meet the demands (*Castro Seixas 1998; Meira Soares 1999*).

The United States has managed to create a non-academic labour market for PhDs. The purpose of the postgraduate studies has been set having in mind both the academic and non-academic goals. The employment-related questions have been taken into account by introduction of professionally linked courses and vocationally orientated studies (*Burgess et al 1998*). A broadening of the labour market for PhDs is to be seen in Germany too. According to the Survey on Academic Profession made by Enders and Teichler in 1995, only 9 % of the doc-

toral junior staff members expected to stay in the higher education sector while two thirds expected to be employed in private business (*Enders 1999*). Whether they succeed in finding work outside the academia, remains to be seen.

If we return back to the situation on the Finnish labour market employer surveys show that in most cases an experienced Master is a better choice from the employers point of view (*Kivinen et al 1997*). The introduction of the new polytechnic system in Finland in 1991 has, however, brought some light into the darkness for more doctors will be needed there. It is stated in the formal qualifications<sup>6</sup> of the senior teachers and rectors of polytechnics that they must have a postgraduate degree: PhD or Licentiate.<sup>7</sup> (Master level is required from lectures.) All in all, it can be said that despite the low unemployment rates of the PhDs quality targets are not met from all the employers point of view. The PhDs are considered as being too theoretical, not enough enterprising and lacking the social and communicative skills (*Kivinen et al 1997; Arasmo 1998*). The same view is shared by the postgraduate students themselves as it results from the interview made in 1996 with the first Finnish graduate school students. Every fourth student felt that he/she had inadequate social skills like the capability for team work and co-operation. Even more students felt that they had insufficient communicative skills like language and negotiating skills (*Aittola & Määttä 1998*).

A similar concern about the professional skills, e.g. the lack of communication skills, of the postgraduates is shared also in the UK. "The PhD [...] has frequently been seen as 'too' academic or not relevant to the needs of employers." (*Burgess et al 1998*)

There are two opposite phenomena prevailing on the professional markets, on the one side qualifications required for some professions are very specified with only certain educational programmes leading to them, on the other, there are occupations that are open for persons with diversified educational backgrounds. This has already lead to a situation where there is a shortage of experts in certain fields and oversupply of PhDs on some others (*Kivinen & Ahola 1999b*).

### Rethinking the purpose of postgraduate training

In the light of the previous scene rethinking the purpose of postgraduate training could be useful. There are several options for seeing it — none of them are new but appear from time to time in the discussions on higher education policy. Still, none of the options seems to be able to provide tools to open the Gordian knot without cutting it.

If the higher education system (research and teaching) cannot absorb the growing number of PhDs, and if the other employers' needs are not met should we introduce a professional PhD for those who do not want to train themselves for the academic sector? This solution has been experimented for example in Britain. The UK has created closer links between postgraduate education and industry by developing specific industry-focused doctorates (*see Burgess et al 1998*). This kind of system would, no doubt, have a positive effect on the PhDs employment but it could produce problems when appropriating the scarce budget resources between universities; industry-related programmes would benefit from the sponsors and the co-funding between universities and industry but, then again, there would be a danger lurking behind that the public money would be used for indirectly supporting certain fields of industry and even firms which would distort competition and not be in the interests of the taxpayers either. On the other hand, as *Burton R. Clark* states in many of his articles (*e.g.*

6 Decree on polytechnics 256/1995 published in March 3<sup>rd</sup> 1995. (FINLEX)

7 Licentiate degree is between Master's and Doctor's degree and it is the lowest of the two postgraduate degrees but it is becoming rare nowadays.

1992, 1994) it is not wise for universities to stick with a single-source funding (like governmental funding alone) for such a dependency will make them vulnerable to different means of control. According to Clark diversified funding and consequently decentralised control creates positive competition between different institutions and in that way also fosters research and research training (Clark 1994).

Another solution is based on the same ground —with an expectation that universities' output should meet the demand of employers— but the solution is much more crude. Should we simply restrict the number of graduates at least in those fields where the supply and demand are not in balance? This seems to be an impossible choice if we think of the educational strategies in OECD countries that cherish the rhetoric of human capital investment “to promote economic prosperity, fuller employment, and social cohesion. Individuals, organisations and nations increasingly recognise that high levels of knowledge, skills and competence are essential to their future security and success.” (OECD 1998)

Or should we let the laws of the jungle —or laws of the market— take care of the demand and supply? This also seems to be an option that can wait. Even though we are directing towards “neoliberal doctrines of achieving excellence through competition”, this kind of “unfettered competition and the survival of the most successful” is not yet realisable in the Nordic societies “where education, including higher education, is almost entirely funded from the public purse” (Kivinen 1999).

According to Kivinen and Ahola (1999b) postgraduate training can also be seen as “human risk capital”, because investment on PhD degree does not guarantee a rewarding career anymore. If a highly educated person performs routine tasks we can hardly speak about a successful investment neither for the person nor for the society. Moreover, they question “whether there is, or ever has been, something that can be defined as ‘work which corresponds to one’s education’” (*ibid.*). This could well be the basis on which we should stand when trying to find answers to the open question of the purpose of postgraduate training. Accordingly, Kivinen and Ahola now ask “to what extent, instead of traditional organisational careers and permanent jobs, the future of higher education graduates could be described in terms of boundaryless careers or entrepreneurial work” (*ibid.*). The challenge is given to the future PhDs. Also Arasmo (1998) would put an end to the over-worrying about the PhDs by stating: “If skilled, self-confident young professionals, who are capable of critical thinking, cannot find employment, universities can hardly be blamed.” At least a temporary solution for the postgraduates —for as long as the question of the purpose of postgraduate training remains unsolved— could be to face the new world of work with an old PhD degree in the pocket and a creative and entrepreneurial attitude.

## Conclusions

Evaluation and the quality assessment have recently become one more duty for the universities, partly because of the new result based funding systems, partly for the demands of accountability. If we now look back to the five categories defining quality: exception, perfection, fitness for purpose, value for money and transformation, we will notice that all of these are somehow visible in the present higher education policies in the OECD countries. In my opinion, exception can be seen in the differentiation of the universities as well as in the narrowing of qualifications in some professions (specialisation); pursue for attaining perfection can be seen in the rewarding of the centres of excellence; fitness for purpose can be found in the efforts made for matching occupational and educational needs; value for money is being guaranteed by evaluation, result management and performance-based funding; trans-

formation is demanded from both of the university systems (e.g. new graduate schools, professional PhD programmes, entrepreneurial universities) and the (post)graduates themselves (transferable skills for the needs of the changing working life). To sum up, quality issues are very much in the picture, even though they seem vested and are often left behind the figures and numbers.

The purpose of the postgraduate training has not a single answer. It shifts from the preparation for academic research and teaching to giving qualifications to new types of professionals for a team-work type of problem solving in the changed world of work. Not to make the issue too complicated, I believe in common sense which says that a postgraduate should be able to look for and find information, assess it critically, utilise it, and in the best cases, transform it into new knowledge. At least we can expect that PhDs are intelligent —some of them wise— enough to survive among the “less educated” people, if not, then the investment on postgraduate training is being wasted.

PÄIVI KAIPAINEN

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