

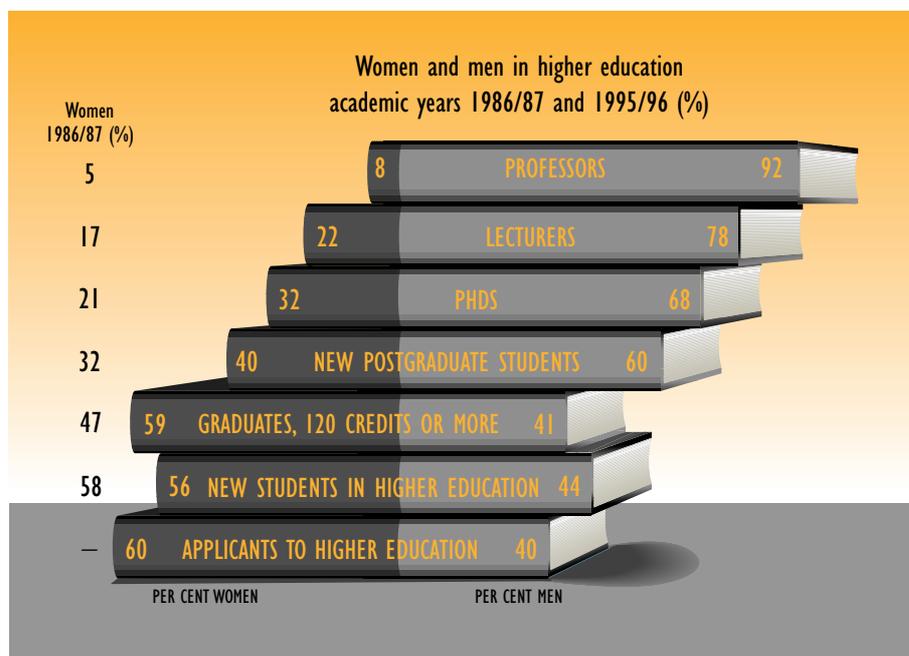


Women and men in higher education

**from upper secondary
to postgraduate training
1986/87–1995/96**

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in higher education*

from upper secondary to postgraduate
training 1986/87–1995/96



**Women and men in higher education – from upper secondary to postgraduate training
1986/87–1995/96**

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Foreword

“Women and men in higher education” is an updated and somewhat extended version of the similarly entitled report published in June 1996.

The purpose of the report is to provide a survey of the distribution of women and men in higher education in the period from 1986/87 to 1995/96.

To shed further light on the topic, a number of interviews with people working with gender equality issues have been included in the report.

Since young people’s choice of study orientation at upper secondary is of decisive significance for their subsequent progress to higher education, a section on the upper secondary and the transition to higher education is included. The distribution of tertiary education in the population between the ages of 25 and 64 is also presented by way of introduction. To round off the report and supplement the picture given there is a brief account of study debts and salaries for women and men.

Although there is progress towards a more even distribution of the sexes in a long-term perspective, both in basic higher education and in postgraduate training, important shortcomings remain. In Government Bill 1994/95:164 it was stated that an important aspect of more efficient work towards gender equality is the provision of statistics that

take account of gender and are easily accessible to users.

Although there is an ordinance (1992:1668, modified in 1994) stipulating that all individually-based official statistics should take account of gender distinctions, it is our opinion that it would be of value to have a special publication to emphasize this particular issue. It is the intention of the National Agency for Higher Education to continue our close surveillance of the progress of gender equality in higher education.

The report was prepared by Ewa Foss of Statistics Sweden in collaboration with the National Agency for Higher Education. Questions may be addressed to both the Agency and the author of the report at the following telephone numbers:

The National Agency for Higher Education
08-453 70 00
Statistics Sweden
019-17 60 00

Stockholm
April 1998

Agneta Bladh
Director-General

Inger Rydén Bergendahl
Head of Department

In brief

Small differences in educational levels between women and men

In the mid-1990s, 27 per cent of women and 25 per cent of men in the age group 25-64 had received higher education.

It is slightly more usual for women than for men to have higher education of less than three years duration. Longer higher education is equally common for women and men, around 12 per cent. Of the men, 1.1 per cent have postgraduate training, and of the women, 0.3 per cent.

The longer the period of education, the smaller the differences in educational orientation between women and men

Among those in the age group 25-64 with postgraduate training, the commonest educational orientation for both women and men is technology/natural science. The second commonest orientation is (health sciences)/medicine, also for both sexes. In the group with short higher education, more than 40 per cent of the men, but only five per cent of the women have an orientation towards technology/natural science. The reverse is the case for the health sciences sector, as 37 per cent of the women and five per cent of the men have this orientation.

A great increase in the transition from upper secondary to higher education

The transition frequency within three years from upper secondary to higher education increased for those completing upper secondary between 1986/87 and 1995/96 from 21 to 35 per cent. The increase is

related to the expansion of higher education and modified admission rules that have favoured younger applicants. The increased interest in higher education is also related to a tougher labour market, especially for younger people.

During the whole of the period being studied, women have had a higher frequency of transition than men by some 8 percentage points. A higher proportion of women than men from the majority of upper secondary lines has commenced higher education.

Women have slightly better grades from upper secondary than men, while men tend to achieve better results in the national university aptitude test. Grades and the national university aptitude test are the two most important selection instruments for admission to higher education.

The programmes available in higher education are better suited to male demand

Of all first-time applicants to higher education, some 60 per cent are women and 40 per cent are men. Among those commencing higher education the proportion of women to men is 56 to 44 per cent. The reason for comparatively more men than women being admitted to higher education from among the applicants is that women and men to a great extent apply for different programmes. The pressure of applicants is not as great for programmes constituting first-hand choices for men as it is for programmes constituting first-hand choices for women.

After the basic year — more women choose technology/natural science in higher education

The basic year in higher education was introduced on a large scale in the academic year of 1992/93 with a view to increasing the recruitment base for programmes in technology and natural science and also to stimulate women to apply for these subject areas. Of the approximately 2,800 students taking the basic year in the academic year of 1995/96, 52 per cent were women.

After completing the basic year, more women than men commence technological or natural science programmes in higher education. The commonest orientation for women was the compulsory school teaching programme (maths and science) and for men it was engineering. This reflects female and male choices during the basic year.

60 per cent increase in new students in higher education

During the period from 1986/87 to 1995/96, the number of new students in higher education has increased by almost 60 per cent to around 66,000. The proportion of women has decreased slightly, from 58 to 56 per cent.

No increase in the number of degrees taken

In the past ten years, the number of basic degrees taken has varied between 30,000 and 34,000. The proportion of women among those taking degrees has decreased from 64 to 59 per cent. The decrease is due to the fact that degree certificates are no longer awarded for supplementary advanced courses, where women have been in a clear majority.

Degrees of at least 120 credits have doubled, however — and are now awarded to more women than men

The number of degrees of at least 120 credits has increased from just under 13,000 to 26,000 per year, and the proportion of women has increased from 47 to 59 per cent. Apart from an effort to increase the number of long programmes in natural science and technology, the increase is due to the reorganization and extension of certain health sciences and teaching programmes dominated by women.

A larger proportion of women in technology

Since the academic year of 1986/87 the proportion of women among graduated college-trained engineers (shorter programmes) and graduate engineers (longer programmes) has increased by a few percentage points to approx. 20 per cent in 1995/96. Among new students in the graduate engineering programmes in that academic year the proportion of women was 23 per cent.

... but no increase in male teachers or carers

There is no corresponding increase for men in the teaching or health sciences sectors, however. The trend is towards fewer and fewer male teachers.

Bigger changes in the distribution of women and men in postgraduate training than in basic higher education

In the years between 1986/87 and 1995/96, the number of those commencing postgraduate training programmes has increased by almost 40 per cent from 2,300 to 3,100.

In the period under consideration, greater changes towards a more even gender distribution have taken place in postgraduate training than in basic higher education. The proportion of women has increased by eight percentage points from 32 to 40 per cent of new postgraduate students. In technological faculties, the proportion of women has increased from 6 to 18 per cent. The proportion of women has increased in most other faculties as well.

Lower salaries for women regardless of educational level

At all levels of educational attainment — from those with only compulsory school to those with postgraduate degrees — men

have higher salaries than women. In 1995, women with post-upper-secondary educational qualifications had on average around 85 per cent of the salary of men with the same educational background.

Big differences in the distribution of women and men among teaching staff and research staff

In the autumn of 1996, women comprised rather less than 9 per cent of professors, 23 per cent of senior lecturers and 46 per cent of junior lecturers. Since 1987, the proportion of women has increased in most categories. The increase among professors only amounts to four percentage points, however.

Background

In this background section, an account is given of some significant Government Bills relating to gender equality in higher education in the past ten years.

In Government Bill *prop. 1987/88:105* (Gender equality policies for the 1990s), it was noted that although gender equality had advanced, there still remained great shortcomings. The labour market was powerfully segmented along gender lines with respect to distribution in various sectors, positions held at different levels and various professions. Low value was often attributed to work done by women.

The gender-based educational choices made by young people entailed a risk that the segmentation of the labour market will become permanent. The role of educational policy for working towards gender equality was considered central. The measures to be taken or left undone would influence gender share in the labour market for the foreseeable future.

The Bill stated the same long-term goal for the educational programmes of both the upper secondary school system and higher education — that neither sex should have a representation falling short of 40 per cent. In relation to the then impending quinquennium of 1988-93, particularly great efforts were to be undertaken in higher education to increase the number of women in technological programmes to at least 30 per cent and the number of men in health sciences programmes of medium duration, such as nursing programmes, to 25 per cent.

In its research policy Bill of 1993, the Government presented a ten-point programme for promoting gender equality in higher education. The core of the proposals amounted to earmarking special funds for the purpose of promoting gender equality activities.

Gender equality between women and men in higher education was once more brought into focus in the spring of 1995 thanks to the special Bill on gender equality between women and men laid before Parliament (*prop. 1994/95:164*). At that time the Bill emphasized the importance of accelerating and intensifying efforts to achieve a more even gender distribution in higher education.

In the official report (*Ds 1994:130*) that provided the briefing materials on which the Bill was based, it was stressed that “the efforts to achieve gender equality being made by institutions of higher education are important for everybody, in order to enable institutions of higher education to make the fullest possible use of the quality potential present in cooperation between the sexes on a basis of equality. The promotion of gender equality is therefore not solely a women’s issue.”

In May 1997 yet another Bill was published dealing with issues of gender equality, “Higher education: management, teaching staff and organization” (*prop. 1996/97:14*). It contained among other things proposals for principles regarding recruitment objectives for institutions of higher education with a view to increasing the proportion of women among newly appointed professors.

Men's power and women's interests

Interview with Christina Bergqvist, teacher and researcher at the Department of Political Science at Uppsala University

The Equal Opportunities Law has two main parts. One prohibits gender discrimination. The other deals with the measures needed to achieve gender equality in the workplace. The part concerning prohibition is easy to relate to. The articles are perceived to be concrete and explicit. Likewise the catalogue of the legal consequences that discrimination may entail.

Article 16 — Illicit gender discrimination is deemed to occur if an employer in connection with taking on an employee, promotion or training for promotion selects a person in preference to another person of the opposite sex, although the person passed over has better objective prerequisites for the task or the training in question.

The sanctions that may be used against an employer who takes on a newly-graduated man and rejects a woman with the same qualifications are stated in Article 25. If gender discrimination takes place in a manner that is prohibited in Articles 16 or 17, and an employer takes on one or more individuals in preference to others of the opposite sex, the employer shall pay damages to the person or persons discriminated against for the outrage such discrimination involves.

It emerges with laudable clarity that any employer who ignores qualifications and takes on employees at whim can be compelled to pay for such a choice. It is, however, not always particularly easy to know whether or not you have been the victim of gender discrimination. The competence claimed by competitors for the job is appended to applications and assessed by the employer, not by fellow-applicants. Suspicion must exist, and this is hardly conducive to creating a better atmosphere between the sexes. This is the reason for the second part of the Equal Opportunities Law, which speaks of active measures, but in nothing like the explicit terms of the prohibitions in the first part.

To put it briefly, the rules stipulate that all workplaces with more than ten employees shall draw up a plan for gender equality. This plan must be a concrete plan of action with quantifiable objectives. In addition, the employer is obliged to make an annual inventory of the differences in pay between men and women doing all types of work and in all categories of employees. Work conditions shall be suitable for both women and men — changing rooms may be needed, for instance.

It is also the duty of the employer to keep an observant eye on the staff to make sure that sexual harassment does not occur. Thus far, the stipulations are relatively clear. But where taking on new employees is concerned, the text becomes fuzzy. It is of course clear that the employer shall strive to attain an even gender distribution, but it is not self-evident how this is to be done.

It is stated in Article 9 that the employer shall make an effort. One method used in the academic world is allocation by quotas. It is a method that arouses strong feelings. The alternatives appear to be for or against, and the tone of the discussion is often polemical. Political scientist Mats Lundström in Uppsala is often quoted on this issue. He wrote

the book *Jämställdhet eller sexistisk rättvisa* (Equal opportunities or sexist justice) and is sceptical about gender quotas. Christina Bergqvist PhD works at the same Department in Uppsala. She has written a dissertation on the subject entitled *Mäns makt och kvinnors intressen* (Men's power and women's interests), and finds it rather irritating that the views of Mats Lundström have received so much attention.

"I do research in this field and can see the practical consequences of quotas close-up. Mats Lundström is up in the clouds rather, I think."

Doctor Bergqvist does not wish to claim that allocation by quotas is the ultimate method for achieving gender equality, but that it has a role to play in certain circumstances – after careful consideration, of course, as she emphasizes.

A quota provides a strict rule that stipulates exactly how many vacant posts must be filled on the basis of something other than competence, namely gender. An objection often raised to the system is that gender can hardly be categorized as a quality, and thus has little or nothing to do with suitability for a particular job.

In the academic world, few women are represented at the top of the hierarchy. Only eight per cent of rather more than 2,000 professors are women. A political decision has been made demanding a change in that state of affairs. Carl Tham recently made a statement on the issue. Qualified women should not have to wait for current professors to vacate their chairs. The Social-Democratic Minister rather considers that new professorships should be established for the benefit of women.

Critics are astounded by this idea and shake their heads in incredulity. They think that such a measure would quite clearly create an A-team and a B-team, and that the Tham professorships directly entail lower status.

"The university is made up of structures of incredible male dominance and elitism, in which professors eagerly defend their privileged position," says Christina Bergqvist. "Both Mats Lundström and I agree that such structures exist and need to be changed. Quotas may be one way of grappling with the problem and bringing about change, even if they are a short-term measure."

"But they are no perfect solution. What's more, some areas, such as politics, are better suited to this approach than others."

A controversy has long been raging concerning the value of quotas as the best measure to be implemented to achieve real steps towards increased gender equality in working life. And it seems very likely to persist, with the arguments frequently solidifying into rigid dichotomies.

Perhaps a clearer formulation of the Equal Opportunities Law would have led to a more constructive approach to achieving the desired goals. At the end of the day allocation by quotas is just one possible approach among many, and in many respects the polemics over its existence feel like filters in front of the real problem. Perhaps the wood of gender equality would be a little easier to see if it were not for all the quota trees.

By Malena Bång

Higher education in the population

Level of education

A consequence of the higher education reform of 1977 was to convert practically all post-upper-secondary, tertiary education in Sweden into higher education. A few tertiary programmes, such as those for officers and policemen, are not included in the general category of higher education, however. A number of the major programmes that were transferred to the higher education sector in 1977 were and still are strongly dominated by women, such as nursing programmes and pre-school teaching programmes.

This section provides an account of the proportion of the population with higher education qualifications in the age group 25-64. The age group's upper limit is set by retirement age, and the lower limit by the circumstance that few individuals have had time to complete higher education before the age of 25. Higher education is divided into three groups: programmes lasting less than three years, programmes lasting at least three years, and postgraduate programmes. In 1995 the number of people with short-duration higher education amounted to 624,000, 525,000 had higher education of longer duration and 31,600 had postgraduate education.

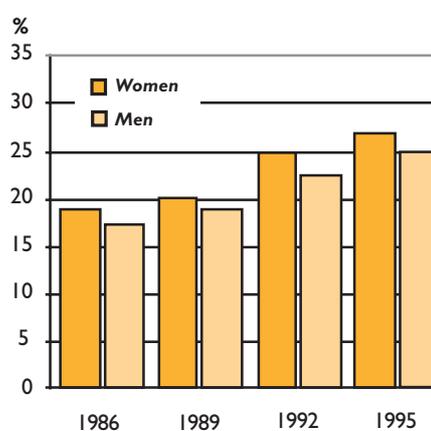
A larger proportion of the population with higher education

In 1995, 26 per cent of the Swedish population in the 25-64 age group had some higher education. The corresponding proportion ten years earlier, in 1986, was 19 per cent. Some percentage points of this change are due to qualitative improvements in the statistics used.

The great increase in the proportion of people with higher education is primarily due to the fact that the generation which did not benefit from the great expansion of upper secondary and higher education has now retired or is about to retire, and that those born later and now forming part of the 25-64 age group are more highly educated.

By reason of the powerful expansion of higher education in Sweden in recent years, the proportion of the population with higher education will continue to rise.

Proportion of population with higher education, 25-64 years, 1986, 1989, 1992 and 1995



Greatest increase among women

A rather greater proportion of women than men have higher education. In 1995 the proportion of women was 27 per cent and of men 25 per cent.

In the past ten years the proportion of women has increased rather more for women than for men. Women choose higher education to a greater extent than

Shorter programmes predominate

Rather less than one per cent of the population had postgraduate training in 1995, 12 per cent had higher education of three years or more and 14 per cent had shorter higher education. It is above all the proportion with this shorter higher education that has increased. In the table below, data are given covering a ten-year period. The quality of the statistics used improved in 1991, and as a result data from before this date are not wholly comparable in relation to subsequent data.

A larger proportion of women than men have higher education of short duration

In 1995, 15 per cent of women and 12 per cent of men had higher education of short duration. The proportion has increased rather more for women than for men since 1986. The difference between the sexes will probably decrease. This will be the result of extending more predominantly female

programmes, such as nursing, to last three years.

Equal proportions of women and men with higher education of longer duration

In the 25–64 age group there was approximately the same proportion of women as men with higher education of at least three years' duration. Since 1986 this proportion has increased for both sexes by one or two percentage points.

A larger proportion of men have postgraduate training than women

There are almost 31,600 people with postgraduate training in Sweden in the 25–64 age group. This corresponds to 0.3 per cent of women and 1.1 per cent of men. For men, the proportion has increased by one or two tenths of a percentage point since 1986, whereas the proportion for women remains at the same level.

Proportion of population with higher education in the 25-64 age group in 1986, 1989, 1992 and 1995

Year		No. of age 25–64	Proportion with higher education ¹⁾			
			< 3 years	≥ 3 years	Postgrad.	Total
1986	Total	4,224,000	9	9	0.6	19
	Women	2,093,000	9	10	0.3	19
	Men	2,132,000	8	10	0.9	18
1989	Total	4,309,000	9	10	0.7	20
	Women	2,128,000	11	10	0.4	21
	Men	2,180,000	8	10	1.9	19
1992	Total	4,434,000	12	11	0.6	24
	Women	2,186,000	14	11	0.2	25
	Men	2,248,000	11	11	1.1	23
1995	Total	4,542,000	14	12	0.7	26
	Women	2,303,000	15	11	0.3	27
	Men	2,239,000	12	12	1.1	25

¹⁾ Data loss relating the level of education is markedly less for the last two years given than the earlier years. Data for completed courses of at least 20 credits in higher education are not available before 1990. Both of these circumstances affect comparability. An estimated one or two percentage points of change are due to this quality enhancement of the statistics, particularly in relation to higher education of short duration.

Level of education and age

Among the four age groups for which data are given (see diagram), a considerable increase in the proportion with higher education may be observed among the younger as compared to the older groups. In the youngest group of 25–34-year-olds there are relatively many individuals still pursuing a programme of higher education.

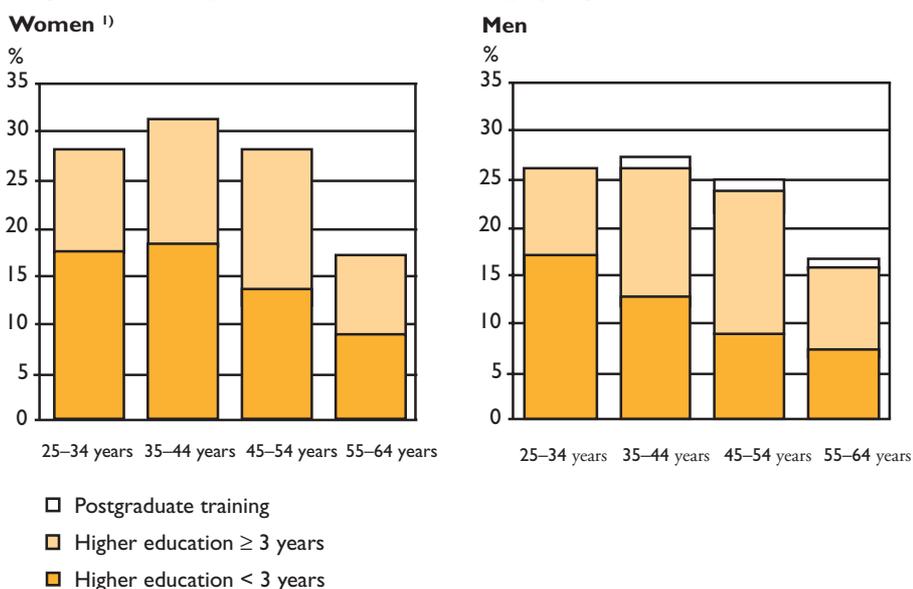
The greatest differences found between younger and older women

Especially among women, there are great differences in the numbers with higher education in the different age groups. Among women between the ages of 25 and 34, 32 per cent had higher education. In the oldest group for which data is given, those between 55 and 64, the proportion was only

18 per cent. Thus a doubling of this proportion has taken place for women. The corresponding proportion for men shows that 27 per cent of those in the 35–44 age group had some higher education, whereas the proportion in the 55–64 age group was 17 per cent. The increase for men has been smaller than for women. It was previously the case that a greater proportion of men than women in the oldest age-group had higher education, but that is no longer the case, as may be seen from the diagram.

Even though the level of education is now relatively similar for both women and men, there still remain great differences in orientation, however, which will be discussed later in the report.

Proportion with higher education in different age groups in 1995



¹⁾ The proportion of women with postgraduate training is less than 1 per cent in all age groups.

Level of education in different counties

Big differences found between counties

There are big differences between counties with respect to the proportion of the population with higher education. The largest proportion is found in the counties of Stockholm and Uppsala where 32–35 per cent had higher education in 1995. Gothenburg-Bohus and Malmöhus counties also have a proportion very close to 30 per cent. The differences in the level of education between counties are due to such factors as differences in the structure of the labour market and the availability of higher education, but demography may also be significant.

Higher levels for women in almost every county

In almost every county, the proportion of women with higher education is greater than the proportion of men in the same county. The difference between the sexes, which does not exceed four percentage points, can be ascribed almost exclusively to differences in programmes of short duration.

In relation to higher education of longer duration, the differences between women and men in different counties are small, around one percentage point. There are, however, great differences in the level of education between counties, ranging from only seven per cent with higher education of longer duration among men in Gävleborg county to 19 per cent among men in Stockholm and Uppsala counties.

As previously shown, a somewhat larger proportion of men than women have

postgraduate training. The greatest difference between the sexes is to be found in the county with the highest proportion of people with postgraduate training, Uppsala county, which has a total of 2.7 per cent — 4 per cent of men and 1.3 per cent of women.

Proportion with higher education in the 25–64 age group in 1955, by county. Per cent.

County	Total		≥ 3 years incl. postgrad. training	
	women	men	women	men
Stockholm	35	33	17	19
Uppsala	34	32	17	19
Södermanland	22	19	9	8
Östergötland	24	24	10	12
Jönköping	20	18	8	8
Kronoberg	23	20	9	9
Kalmar	20	17	8	8
Gotland	20	18	9	10
Blekinge	20	21	8	10
Kristianstad	21	19	9	9
Malmöhus län	28	27	13	14
Halland	25	22	10	11
Gothenburg-Bohus	29	29	13	16
Älvsborg	22	18	9	8
Skaraborg	20	18	8	8
Värmland	22	18	9	8
Örebro	24	20	10	9
Västmanland	23	21	9	10
Dalarna	22	18	9	8
Gävleborg	21	17	8	7
Västernorrland	23	20	9	8
Jämtland	25	20	10	9
Västerbotten	28	25	12	12
Norrbottn	23	21	9	10
Total	27	25	12	13

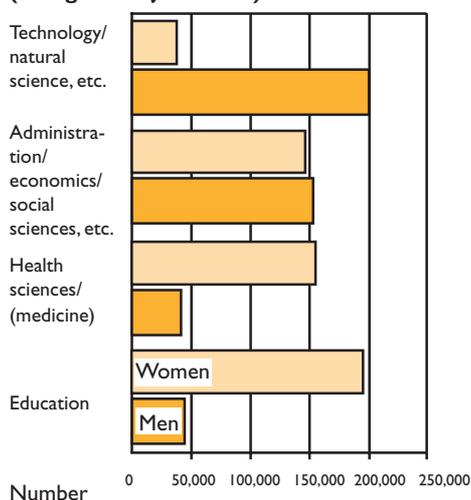
Educational orientation

Big differences between women and men

The difference between choices in educational orientation made by women and men with higher education is very marked, but it diminishes as the educational level rises. The greatest difference is found in relation to programmes of short duration and the smallest difference among those with postgraduate training.

Proportion with higher education in the 25-64 age group in 1995, by educational orientation

(4 largest subject areas)



The biggest difference in orientation for those with higher education of short duration

Of men in the 25–64 age group with higher

education of short duration, 42 per cent had a technology/natural science orientation, which may be compared with five per cent of women. Among women the commonest orientation was health sciences followed by education. More than 60 per cent of women, but only 15 per cent of men, were accounted for by these two orientations.

A somewhat smaller difference for higher education of longer duration

Twenty-seven per cent of men and 7 per cent of women with higher education of longer duration have an orientation towards technology/natural science. 52 per cent of women and 24 per cent of men have an orientation towards health sciences or education at this level. Slightly less than a third of both women and men at this level have an orientation towards administration, economics or social sciences.

The smallest differences are found in relation to postgraduate training

Among those with postgraduate training, an orientation towards technology and natural science is commonest among both women and men. Approximately a quarter of women and men with postgraduate training had an orientation towards medicine. Postgraduate training takes place on a large scale in the medical faculties (see the section on postgraduate training, page 54).

Higher education in the 25-64 age group, by level and orientation, 1995. Per cent.

Orientation ¹	Women		Postgrad	Men		
	< 3 years	≥ 3 years		< 3 years	≥ 3 years	Postgrad
2) Aesth./arts/religion	6	10	16	4	7	9
3) Education	27	39	0	10	15	0
4) Admin./econ./soc. sc.	21	29	18	25	31	14
5) Techn./nat. sc.	5	7	32	42	27	48
7) Health sc. (med.)	37	13	28	5	9	25
Others (1+6+8+9)	4	3	6	15	12	5
Total	100	100	100	100	100	100
Number	340,000	261,000	7,000	284,000	264,000	24,000

¹⁾ There is a more detailed description of the classification of educational orientations on page 72.

Big changes in certain programmes — from a generational perspective

In a short-term perspective of ten years, the difference between the choices of educational programmes made by women and men are marginal in most cases. In a longer-term perspective — as between difference generations — big changes have taken place for certain groups, however. To illustrate this the proportion of women in the relevant age groups will be given in relation to certain educational categories.

Younger women more frequently have a traditionally “male” education ...

In a group with the longest and formerly clearly male-dominated educational programmes, the proportion of women has more than doubled when a comparison is made between younger (25–34) and older (54–64) groups. Programmes for the education of doctors, lawyers, architects, dentists, theologists and certain graduate engineers belong in this group of programmes. The gender distribution in the youngest group is approximately half women and half men for these programmes. In the oldest group, the proportion of women is often less than 20 per cent. In graduate engineering programmes, the proportion of

women and men varies greatly depending on the orientation chosen, which makes comparisons over time for the whole group more difficult.

... while traditionally “female” educational programmes remain female

Only marginal changes have occurred among pre-school teachers and nurses with respect to developing a more even gender distribution. Even in the youngest group, the proportion of women is at least 90 per cent. Men have not at all penetrated educational programmes that are predominantly female by tradition to the same extent as women have penetrated traditionally male educational programmes.

Fewer and fewer male teachers

The proportion of men with teachers training decreases with decreasing age. The decrease is particularly evident in relation to subject teachers. Among pre-school teachers, there is a slightly higher proportion of men in the 35–54 age group, but this decreases again in the youngest group. Among those trained as social workers, too, there is a big decrease in the proportion of men from 30 per cent in the oldest group to 15 per cent in the youngest group.

Proportion of women per age group in certain educational categories, 1995.

Educational categories	25–34 yrs % women	35–44 yrs % women	45–54 yrs % women	54–64 yrs % women	Difference in percentage points between youngest and oldest age groups
Grad. eng., chem. tech., etc ¹⁾	47	29	14	6	41
Architects	52	44	28	16	36
Lawyers	52	40	24	19	33
Dentists	58	49	41	28	30
Theologists	45	32	27	19	26
Doctors	48	40	34	27	21
Subject teachers	65	51	52	45	20
Social workers	85	78	75	70	15
College eng. & equiv.	19	16	14	9	10
Grad. eng., electrotech., etc ²⁾	11	7	3	2	9
Primary teachers	87	80	79	80	7
Pre-school teachers	95	94	95	99	-5
Nurses	90	90	93	97	-7

¹⁾ Chemical technology, mining sciences/geotechnology

²⁾ Electrotechnology, technical physics, computer technology.

Schools are obsessed with differentiation mania

Interview with Ulla Wikander, professor of Economic History at Stockholm University

The controversy surrounding conditions for men and women has taken on dangerous undertones. For the time being students are starting higher education with a good grasp of gender equality issues. But now both the compulsory school system and the upper secondary are becoming obsessed with differentiation mania. The students are divided into girls' groups and boys' groups. Even children at day care centres are receiving clear signals about the distinction.

"It's like going back one hundred years," sighs Ulla Wikander, professor of Economic History at Stockholm University.

"At the turn of the century people were obsessed by biological issues, by how to define "normal" masculinity and femininity. It was not considered beneficial for the development of female sexual organs to study mathematics. Now all serious biologists and geneticists talk about overlap between the sexes instead. We know that women have an equal capacity for acquiring knowledge and competence. And yet people are still going back in time and marking out distinctions," she says.

Ulla Wikander is one of the country's few female professors. There are only eight per cent of them. For this reason it attracted attention when she was appointed to two professorships, in both Stockholm and Uppsala. What's more in the discipline of Economic History, long a male-dominated subject.

"I'm still so surprised I'm thunderstruck. Especially as my research has been into the power relationship between women and men, something much more controversial than the number of women studying at university.

"The grounds for assessment have quite simply changed. There is now an effort being made to bring in more women in the social sciences. I used to teach at the Economics Department at Uppsala University. There were two female lecturers before me there. We conducted interviews to look into this, and discovered that professor Karl-Gustav Hildebrand (b. 1911) encouraged both talented young men and women.

"Women were not discriminated against, and so they stayed," says Ulla Wikander. But aren't the universities still the final bastion of male supremacy?

"They have long been that. Just take the incredible controversy in Uppsala a couple of years ago, when a molecular biologist went public claiming that the reason so few women do research and become professors is their biological clock.

"In the humanities it is still difficult for women to obtain high positions, because they are in a majority. That naturally feels more threatening. Will they take over everything?

"Otherwise universities have actually realized that it is important to do something about gender equality," says professor Wikander.

She also thinks it is possible to see a backlash in the community at large, however. Women are expected to work part-time to look after the children. And at the end of the

1980s, gender distinctions became watchwords in the public debate. A whole generation's experience of how much men and women have in common was forgotten.

“Setting the pace for the new differentiation mania in Sweden are researchers such as professor of Forensic Psychiatry Sten Levander and politicians like Chris Heister MP, of the Moderate Party,” thinks Ulla Wikander.

But it is surely natural to discuss differences when genetic research is picking up speed?

“Of course, but it is strange that such general conclusions are being drawn and that the differences have become such sensitive issues. For at the same time we have another trend of transsexuality, where the most interesting theoretical feminists are discussing gender boundaries and their forms, and how much of the biological sphere is socially determined.

These days, many serious researchers are also discussing humanity's enormous capacity for adaptation. In professor Wikander's view, biological gender is attributed properties that limit women's opportunities. In her research she has studied this phenomenon in working life in a historical perspective.

In her book *Kvinnors och mäns arbeten* (Women's work — men's work) she described conditions at the Gustavsberg porcelain factory. She found that men and women sometimes had the same jobs around the turn of the century. There was a tendency towards a dissolution of gender patterns. But when rationalization came during the inter-war years, the tasks were distributed among the workforce. Women had to accept immobile, monotonous drudgery and were more closely supervised by the men, because women were expected to be housewives. Those who came to the factory were young and malleable and got the hardest jobs, the ones no-one can do for a whole lifetime. And men were placed in a suitable lifetime career.

“The male sex is often attributed the property of being technically oriented, but that is a culturally shaped perception,” thinks Ulla Wikander.

“Gustavsberg had a machine that was considered very difficult. For 50 years only men were allowed to work it. But then a new pressing technology was introduced, and so women were allowed to operate the old machine as long as it remained in use. So it was really just a question of the machine's status!”

Currently Ulla Wikander is writing a book about women's work during the past 200 years in Europe. Among other things she has discovered research that punctures the myth of the peace-loving sex. During the world wars, a surprisingly large number of women took part in militant defence organizations. They were eager to send off their sons as soldiers, and many wished to go into battle themselves and sacrifice their lives. Some also went off to war as disguised mercenaries.

“We expect women to be peaceful. It is absurd that we don't have the same expectation of men. It only reinforces their aggressivity. I would be livid if I were a man and kept being told I belonged to the warlike sex.

“Men have quite simply not wanted to let women in on warfare. Violence and power were a privileged male reserve.

“Social expectations are so incredibly powerful!” says professor Wikander.

“And that makes it all the more depressing to see how schools are once more starting to divide the children into gender groups,” she says, “regardless of however praiseworthy the motives might be.”

Immediately before this interview was carried out, there was a radio programme about girls and their lack of confidence yet high grades, and boys and their brash self-confidence, mischievousness and low grades. At one nursery school the staff had begun to divide the children into gender groups and let the girls build play-huts and the boys play with dolls. The girls soon found a satin-rustling compromise and played at being Superman princesses.

At one school where the children are sometimes divided into gender groups, the girls in the radio programme say that it is nice to have the boys out of the way with their noise and disruption. But the boys mumble about missing the girls.

Ulla Wikander thinks that the method might well work in the short term in an unsettled class, but it gives the children a clear signal concerning gender distinctions. It would be better to try to change the children’s behaviour using social training.

“And if the mathematics textbooks take the boys’ world as their starting point, and the history books fail to mention women, that’s where we should be getting involved,” she declares.

Professor Wikander herself went to Magdeburg girls’ school in Uppsala in the 1950s, and calls the time she spent there a nightmare. Girls’ schools were started because it was considered that girls should study more slowly, while their reproductive organs were maturing. It was not until coeducational schools came that girls could see that it was their results that mattered, not their sex.

“Now we are dividing the sexes up again. But statistical averages are something quite different from individuals. Today there are people agitating for a return to girls’ schools again. But no-one has been able to show that girls have regressed since they were abolished.

“Segregation will bring back alienation. The relationship between the sexes is much less charged today than it was 30 years ago. In girls’ schools, male teachers could look like basket cases, but they still got red roses on speech day

“Of course there were sexual overtones in the debates about whether to mix the sexes or not,” she reflects. “There is a fear that we won’t turn each other on if we affirm our similarities. But heaven knows we weren’t less attracted to each other back in the seventies when we went around wearing the same clothes!”

At the Stockholm department there was already a gender perspective in the teaching. But the course on “Women and welfare” should really change its title to “Women, men and welfare” says professor Wikander. In Uppsala, you see, she ran a course entitled “Women, men, power and upkeep”.

It also attracted young men.

By Anna-Maria Hagerfors

Upper secondary

Completed upper secondary

A new upper secondary system

Since the early 1970s, the upper secondary system that was then merged and unified has consisted of lines and special courses. In the early 1990s Parliament took a decision on reforming the upper secondary system which entailed among other things a phasing out of lines and courses and the introduction of programmes instead.

The account given in this section of the outflow from upper secondary between 1986/87 and 1995/96 is generally based on the old classification of lines and uses the five-point grade scale.

The proportion of women and men completing a line is approximately the same size. As early as upper secondary, however, there are very great differences between women and men in their choice of educational orientation. These differences

also play a great part in subsequent choices when women and men choose to proceed with higher education.

An increasing proportion of women in theoretical lines of longer duration

In the table below the main groups of lines and the theoretical lines of longer duration are detailed. Basically, it is these longer lines that have constituted the recruitment base for higher education. The number of students completing the 3/4 year theoretical lines has increased to some 45,000 per year during the 1990s. The proportion of women in this group has increased from 50 to 53 per cent during the period under consideration.

Gender distribution in the longer lines has only changed marginally. The economics line constitutes an exception, however, as the proportion of women taking it has decreased from 62 to 50 per cent. At the end of the 1980s, the proportion of women in

Completed upper secondary lines¹⁾. Total and proportion of women.

Line group/lines	1986/87		1989/90		1992/93		1994/95 ²⁾	
	No.	% w.	No.	% w.	No.	w.%	No.	% w.
3/4 year theoretical lines	37,300	50	42,000	51	47,100	50	44,600	53
incl. Humanities	3,300	87	3,200	89	3,300	89	3,400	88
Social sciences	5,900	70	6,800	70	10,800	71	13,900	68
Economics	11,000	62	12,500	62	12,300	56	9,200	50
Natural sciences	5,700	45	6,500	50	7,300	52	7,700	49
Technical 3rd year ¹⁾	2,200	22	6,000	21	9,500	19	7,000	14
Technical 4th year	9,300	18	7,000	19	4,000	18	–	–
2-year theoretical lines	9,900	58	6,600	62	6,700	61	660	50
2-year vocational lines	44,400	45	39,300	45	32,900	43	3,500	29
3-year vocational lines	–	–	420	27	8,600	43	18,900	54
All lines	91,600	48	88,300	49	95,400	48	67,900	52

¹⁾ Only includes students completing (requesting school-leaving certificate) the three-year technical line and who cannot be found after two years as having completed the fourth year of the technical line. (For 1994/95 the control was done after one year.)

²⁾ The number of those completing the upper secondary vocationally-oriented 2-year lines was small this year due to the extension of the lines. In the academic year of 1994/95 there were also some 3,300 students completing the new programmes of study.

the natural science line increased to approximately one half. The proportion of women in technical lines decreased during the period.

Among those completing the vocational lines of the upper secondary, both 2-year and 3-year, men have been in a majority. The data for 1994/95 should be interpreted with caution, as only a few students completed short lines in this academic year.

Women and men in different lines

In a number of lines, the gender distribution is very skewed, as may be seen in the diagram. The data are from the academic year of 1993/94, which is the last year with a large cohort completing 2-year lines. Less than 10 per cent of women were following six of the vocational lines completed by at least 1,000 students.

The opposite situation could be observed in the health sciences and care lines, which only had about 10 per cent of men. Compared with the distribution in corresponding lines in 1986/87 only small changes took place for most lines.

During the period under consideration there has been an explicit ambition to try and reduce gender divisions in the upper secondary system (e.g. the Bill *prop. 1987/88:105*).

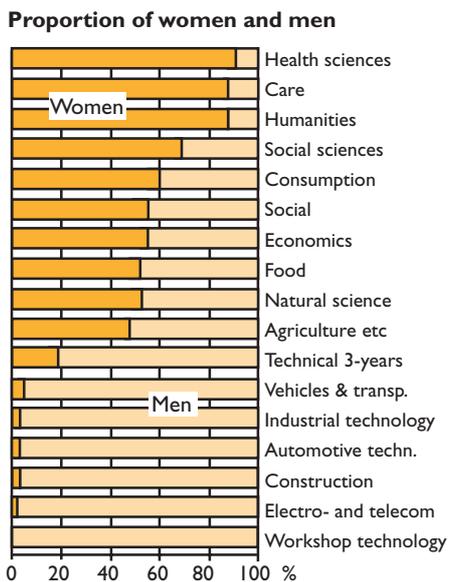
Among those completing the natural science line, the proportion of women has increased to approximately 50 per cent. On the other hand, the proportion of women has not increased in the big vocational lines or the three-year technical line. The proportion of men in the health sciences line has not increased either.

Great gender differences in the new programmes, too

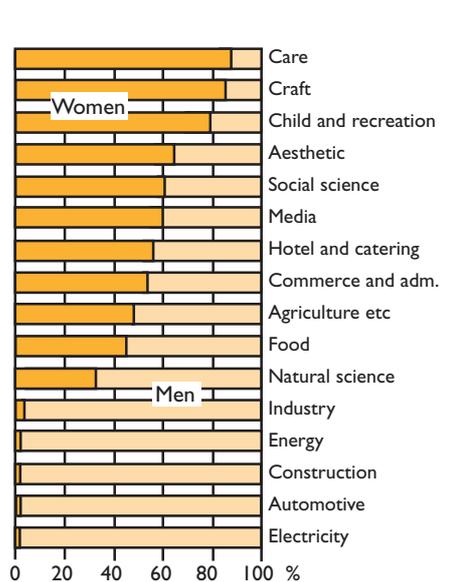
The first big cohort to complete the newly-established programmes in the upper secondary system finished its studies in the academic year of 1995/96, and comprised some 78,000 students of whom half were women.

The lines and programmes are not directly comparable. For instance, the natural science programme contains orientations towards both natural science and technology.

Students completing large upper secondary lines in 1993/94 (at least 1,000 students).



Students completing upper secondary programmes in 1995/96. Proportion of women and men



The diagrams show, however, that gender distribution follows a similar pattern in relation to both lines and programmes.

Stated interest in higher education

In the autumn terms of the academic years 1993 to 1996, students in the final years of the upper secondary were asked in a survey by Statistics Sweden if they were interested in continuing their studies at an institution of higher education within three years.

Women more interested

Among women in the final year of upper secondary in the autumn term of 1996, 60 per cent answered that they intended to apply for admission to higher education, and some 30 per cent answered that they had not yet made up their minds. Among men, the corresponding proportions were 46 and 29 per cent (see diagrams). Interest in higher education has increased during the period under consideration.

Interest in higher education varied greatly between the various programmes/lines. It

was greatest in the natural science programme, approximately 90 per cent in the autumn of 1996.

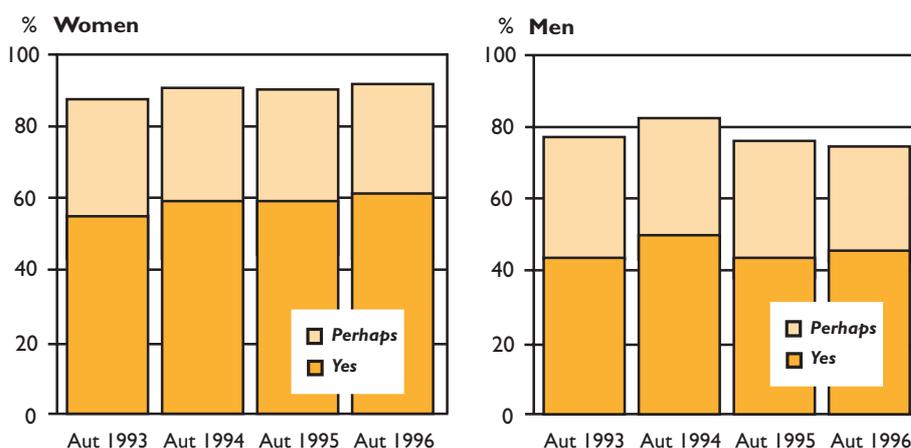
In the section on the transition to higher education (page 29), the actual dimensions of the transition are reported. Among those completing upper secondary lines in 1992/93, 39 per cent of women and 31 per cent of men had begun higher education within three years.

Women and men equally tired of school among those who do not wish to continue their studies

In the group completing upper secondary in 1996/97 that did not intend to continue to higher education, half of both women and men reported feeling tired of school.

A larger proportion of men than women responded that they already had sufficient education. More than twice the proportion of women to men responded that they intended to study more at upper secondary level, in local authority administered adult education, for instance.

Interest in higher education within three years in the final year of upper secondary.¹⁾



¹⁾ The high level of interest reported for higher studies in the autumn of 1994, especially for men, is linked to the reorganization of the upper secondary system, in that relatively few students completed vocational lines in the academic year of 1994/95, which also affected the totals.

Upper secondary grades and the national university aptitude test

Grades distribution

A larger proportion of women with high grades

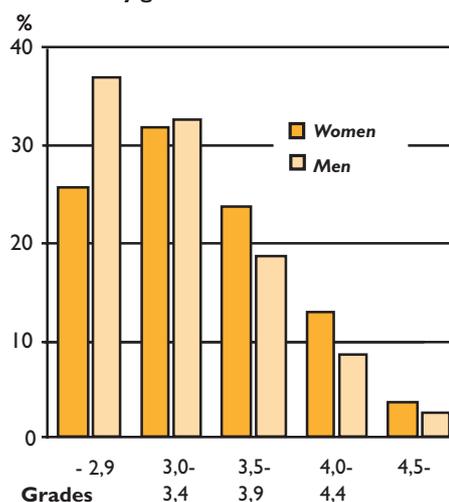
Among all students completing upper secondary lines in 1992/93, 18 per cent of women and 12 per cent of men had an average grade of 4.0 or higher. The opposite was the case for the lowest grade group reported, under 3.0. In this group 37 per cent of men and 26 per cent of women could be found. On page 31 the frequency of transition to higher education for the various grade groups is given.

High grades in the natural science line

Grade distributions are very different between the various line categories and lines. The average grade has decisive significance for a student's possibilities of acquiring a place in the most attractive programmes in higher education.

There were high grades in the natural science line, with some 40 per cent of both women and men having an average grade of at least 4.0. This may be compared with for

Students completing upper secondary in 1992/93. By grades.



instance the 3-year economics line with 13 per cent of women and 11 per cent of men in this grade group.

The lowest grades were found in the 2-year vocational lines, where only 12 per cent of women and 7 per cent of men had average grades of at least 4.0.

Students completing upper secondary in 1992/93 by grades¹⁾ (See note 1 on page 20)

Line categories/lines	Women					Men				
	Grade groups (see explanation)					Grade groups				
	1	2	3	4	5	1	2	3	4	5
3/4 year theoretical lines	21	32	25	16	5	32	31	20	12	5
of which Humanities	25	33	23	14	5	35	28	19	13	5
Social sciences	19	31	28	18	5	33	32	20	11	5
Economics	28	36	22	11	2	36	35	18	9	2
Natural science	8	23	27	28	14	13	23	25	25	14
Technical yr 3	25	31	25	15	5	33	31	21	12	3
Technical yr 4	29	39	21	9	2	45	32	15	6	2
2-yr theoretical lines	26	34	26	12	2	42	33	17	7	1
2-yr vocational lines	35	32	21	10	2	41	35	17	6	1
3-yr vocational lines	27	36	23	12	2	44	31	18	7	1
All lines	26	32	24	14	4	37	33	19	9	3

¹⁾ 1= -2,9, 2= 3,0-3,4, 3= 3,5-3,9, 4= 4,0-4,4 5= 4,5-

The national university aptitude test

Better test results for men

Approximately as many women as men have done the test since 1977. Test results for men have been consistently better than those for women. The difference in recent years has amounted to 6.6-10.2 test points. The greatest differences to the advantage of men were found in the following sections: quantitative methods, interpretation of diagrams, tables and maps, and general knowledge. As of the spring of 1996, the general knowledge section is no longer given, and the maximum number of test points is 122 points.

Better test results with longer education

Educational background correlates clearly with results obtained in the the national university aptitude test. The best results are obtained by those with previous higher education, followed by those with a 3 or 4 year theoretical upper secondary education. Men obtain consistently better results than women with equivalent educational backgrounds.

Why do men obtain better results?

In recent years the fact that men obtain better results on average in the national university aptitude test than women has attracted a good deal of attention. The same pattern is repeated in other countries with similar tests. It has been considered probable that the format of the test provides a partial explanation. Multiple choice questions have a tendency to favour men, while formulating individual answers to questions tends to favour women. This might also explain

the fact that women get better grades than men, since the ability to formulate individual answers is important in most school tests.

Experience with the national university aptitude test has also shown that the subject matter of the texts used is significant for the performance of women and men. Men do best on questions concerning areas such as physics/technology, sport, geography, economics/business, chemistry and politics. Women do best in areas such as care, domestic science, biology, religion, literature and art.

Other factors besides the content and construction of the test may affect results. Retaking the test improves results somewhat. Young people from white collar backgrounds take the test more frequently than others, and men take it more frequently than women.

Researchers also question the expectation that women and men should obtain similar average results. The test is voluntary, each individual decides whether to take it. Test participants thus constitute what is known as a self-selected group. Comparisons based on such groups must be interpreted with great caution. It has been determined that the most gifted women often choose not to take the test. Men choosing to take the test have better results than women in previous tests, and their school grades are almost as high as those of women.

Continued research will have to demonstrate whether the somewhat better results obtained by men in the test are reasonable.

The national university aptitude test in brief

The national university aptitude test has been used since 1977 as an instrument of selection for applicants to higher education with what is known as 25:4 eligibility (at least 25 years old with at least 4 years work experience). In the autumn of 1991 the rules of admission were modified. The opportunity of applying on the basis of the national university aptitude test is now open to all, even for those coming directly from upper secondary.

Until the autumn of 1995, the national university aptitude test comprised six sections giving a maximum of 144 test points or 2.0 normalized points. The purpose of the test is to rank applicants as fairly as possible with respect to anticipated success in higher studies.

Enlightened academia treats women and men differently

Interview with Bengt Westerberg, chair and head of development of the equal opportunities committee at the University College of Karlstad

No-one is surprised if the church falls short in questions of gender equality.

But it leaves a bitter taste to accept that the enlightened world of academia treats women and men differently.

“We have a very strong desire for science and its community to be free of discrimination,” says Bengt Westerberg, chair and head of development of the equal opportunities committee at the University College of Karlstad.

“But it isn’t.

“A clear example is provided by Agnes Wold’s and Christina Wennerås’s analysis of the Medical Research Council and its appointment of research assistants, which demonstrated strongly preferential treatment of male applicants.”

The culture of the academic community in itself is an effective brake on gender equality efforts in higher education declared Bengt Westerberg at a Stockholm seminar for staff at the National Agency for Higher Education.

“It is a widely-held perception that knowledge and competence are the factors governing activities in this community, and that women and men are therefore not treated differently.

“Shortcomings in relation to gender equality are seldom visible at first glance, and it is common for people in higher education to say: ‘We have no discrimination in our department’. That is the way they see things, but that doesn’t mean to say it’s true. When you start investigating the situation, you often find gender-based differences.”

He tells of his experience with the equal opportunities committee in Karlstad.

“We started by looking at salaries. Few of us imagined this would reveal anything unfair. It emerged that 25 per cent of the female teaching staff had lower salaries than male staff with equivalent qualifications and duties.

“We also learned that Karlstad has the same kind of skewed distributions as other institutions of higher education. Two thirds of the teaching staff are men. We have far more young men in technical programmes and far more women in pre-school and school teaching programmes.

“In Sweden this skewed recruitment has been under discussion since the 1970s, and careers guidance counsellors have long tried to encourage non-traditional choices of profession. But on the whole we have failed, and I don’t think that anyone can really say why. Is it already too late to choose at upper secondary? Are there reasons for choices that we have been unaware of? I think these are questions the National Agency for Higher Education should try and find answers to.

“Personally, I have been thinking about how strongly what we call “environmental factors” influence educational choices. A young woman knows that if she applies for a technical programme she will be at risk of failing to develop her full potential. She may have justified concerns that she will not feel comfortable in the male environment. I am satisfied that I have obtained confirmation that many women think in these terms — and choose accordingly.

A young woman will not always interpret the “environmental factor” as an expression of inequality or discrimination, and both sexes may have an interest in concealing such inequalities behind other notions like “technology is like this” or “that’s what men are like “. Similar ideas concerning the nature of women may be heard from men in pre-school teaching programmes, for instance.

“Most students share the academic culture’s normative perception that higher education is free of sexual discrimination. They would like to believe that gender equality has been achieved, both in higher education and in working life. I myself matriculated in 1962, and we also thought that shortcomings in gender equality were a problem for our parents’ generation and not for us,” says Bengt Westerberg with a touch of self-irony.

“But I can see a great risk of today’s younger generation becoming just as unequal after graduation and marriage as previous generations, with his career taking precedence over hers, and her getting a lower salary despite an equal level of education. The fact that this happened to my generation, although we had other ambitions, is demonstrated by Anna Wahl’s study of graduates in business administration and graduate engineers.”

But gender equality in higher education is more than a question of justice. It is also about quality. Quality assessments are in fashion, and when educational programmes are assessed for quality, the quality of gender opportunities should be included.

“The gender perspective in teaching enhances quality, as a dual-gendered view sees more, increases knowledge and thus gives broader competence.

Bengt Westerberg makes a comparison with the business community, where the following view is often expressed: “We cannot just recruit women because they are women. We must base ourselves on competence.”

“This is a strong argument that is difficult to gainsay. But we must ask ourselves: ‘What is competence? What competence do we want?’ It is unreasonable to think that competence is something only men possess. Competence is a great number of different things, and many of them are possessed more by women than by men, and vice versa. A small-scale field study from Gothenburg university that I have seen shows a tendency that strikes me as plausible: women more often developed a remarkable degree of social competence, while men more often developed a clear strategic competence.

“If you want to attain set goals, and don’t care about what happens on the way, then it is more likely that you will find the necessary competence for this among men. If the primary goal is to create a good working atmosphere and good levels of collaboration on the way to the goal, it is more likely that you will find the necessary competence among women.

“Companies start listening when the lack of women in the decision-making strata of the

business community is presented as a lack of competence. For them competence is a decisive factor. The leaders of the business community are not at all affected by arguments based on justice, however.

Why don't young women obtain the competence that is in demand, in technology and natural science, for instance.

"As I said, we have not succeeded in breaking gender patterns in education," Bengt Westerberg repeats. "Those doing the breaking may need good examples and support from others in the same situation."

In Karlstad, female engineers have provided good examples in upper secondary schools. They have given information about their professions, but their meetings with school students are just as much about creating the insight: "Aha! Women can be engineers!"

"Designing courses with a gender perspective does seem to be able to attract the underrepresented sex," says Bengt Westerberg. "In Luleå in the north, programmes in computer engineering for girls became very popular, with applicants from all over the country. Inspired by Luleå's example, we tried to launch a technological course for girls in Karlstad in the autumn of 1996, but we had too few applicants, unfortunately, perhaps because our information was distributed too late."

The equal opportunities committee has also proposed that the pre-school teaching programmes in Karlstad should enhance their profile with a course for male students.

"Unfortunately we haven't got there yet. On the other hand, a male teacher in the pre-school teaching programme started a network for the department's male students, and it's working well."

The University College of Karlstad, where Bengt Westerberg is head of development at the equal opportunities centre, has in his view a powerful ambition to become a college where there is gender equality. The equal opportunities centre has a powerful organizational position with immediate responsibility to the Vice-Chancellor to emphasize the status of the drive for gender equality. The equal opportunities centre focuses on relations between women and men and not particularly on the situation of women as is the case with the Forum and Centre for Research into Women's Issues.

"Our orientation means that we constantly strive to have both women and men involved in gender equality efforts."

He would like to see Karlstad sharpening its profile by way of methodological development in the field of gender equality. In recent years three interlinked instruments have been tried out with a view to revealing shortcomings in gender equality.

"We began with an evaluation survey of all staff. They were asked to indicate on a five-point scale how they perceived the degree of gender equality at the college, how important the issue of gender equality is, their view of male and female competence and so on. We had a high level of response, and it emerged that men and women have relatively similar perceptions but that women see more shortcomings in gender equality than men do."

“The evaluation survey was then used as the starting-point for what we called ‘equal opportunity rounds’ in all the departments. Employees sat down and discussed the situation, and this resulted in animated and committed exchanges in which the staff became aware of gender-determined factors that they had perhaps failed to notice before. The following questions and similar ones were raised. What sex are the lecturers at the department? Which perspectives do we use in our teaching — male, female or both? What sex are our heads of department? What do our structures look like from a gender perspective? What do our reading lists look like? Do we have gender-based ways of thinking?”

The equal opportunity rounds are explicitly included in the college’s equal opportunity plan, as is what is known as the equal opportunity audit.

“We chose that term to show that gender equality is just as important as budget matters,” says Bengt Westerberg. “In the audit we will compare the actual situation with the goals we have set ourselves in the equal opportunity plan, and then report to the Governing Body.”

In addition, this year two equal opportunity case officers are studying whether and in what way equal opportunity plans are being used in the various college departments.

There is a risk in studies of gender equality that they focus too much on factors that can be measured, such as the number of students in different programmes or the gender of the authors of course materials. This may lead to resources being devoted to measures that are measurable too.

“I think quantitative measurements are important,” says Bengt Westerberg, “but the analysis should not be oversimplified. Increasing the number of female authors in the reading list won’t automatically improve gender equality, for instance, the content of the books needs to be scrutinized as well. A female writer may lack a gender perspective just as well as a male writer may have developed one.

What is preferable — special equal opportunity case officers in higher education, or so-called mainstreaming?

“In the long-term perspective mainstreaming is the correct approach. But without someone holding a whip nothing happens, and there is a risk of equal opportunity efforts withering away if no-one keeps an eye on things. In Karlstad at the moment, the most important task is to get all departments and units working actively with gender equality issues, with the equal opportunity committee as a driving force behind them.

“The support of those in charge is decisive if gender equality efforts are to achieve results,” he concludes. “There are clear tendencies, both in higher education and elsewhere, that gender equality issues are treated as side issues. If things are organized that way, it is necessary for the people in charge to know how the equal opportunity group works. Because if someone comes and complains that “that equal opportunity person is making trouble”, the head must be able to say that they are “making trouble on my orders!”

*Ingrid Hagman
freelance journalist*

The transition from upper secondary to higher education

Frequency of transition within three years

Increased frequencies of transition

Since the end of the 1980s, there has been a powerful expansion of the number of places in higher education (see the section on higher education on page 38). In 1991, the rules of eligibility to higher education were modified with a view to increasing the direct transition from the upper secondary to higher education. This, in conjunction with a deteriorating labour market for those with only upper secondary qualifications, has had the effect of increasing the transition frequency within three years from 21 to 35 per cent for those completing upper secondary in the period 1986/87 to 1992/93.

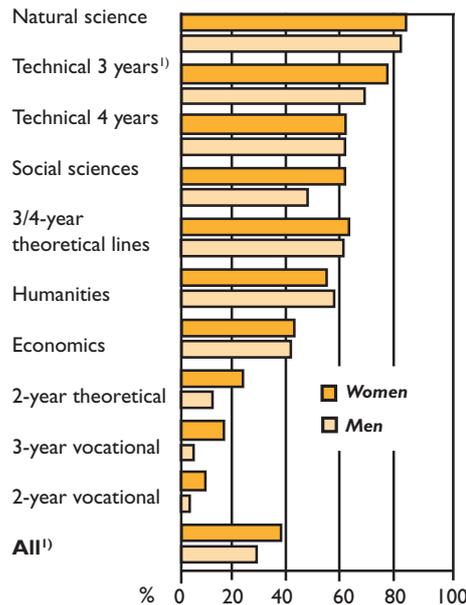
Women completing their upper secondary studies in 1992/93 had within three years an eight percentage points higher transition frequency than men. The difference between the sexes has been of approximately these dimensions since the mid-1980s.

Great variation between lines

The transition frequency to higher education varies greatly between lines, from only around one per cent in some of the vocational courses to 87 per cent from the natural science lines among those completing upper secondary in 1992/93.

From the natural science line and the three-year technical line, the transition frequency has increased markedly by comparison with those completing upper secondary in 1986/87. The increase from these two lines in particular is due to factors such as the resources devoted to encouraging technical studies in higher education. To a certain extent engineering programmes at institutions of higher education have taken the

Students completing upper secondary lines in 1992/93. Transition frequency to higher education within three years up to 1995/96.



¹⁾ Only those students who completed (requested a leaving certificate) the three-year technical line and are *not* found registered as having completed the fourth year of the technical line within two years are included here.

place of the fourth year of the technical line at upper secondary.

For the 3-year technical line, the transition frequency fell for those completing their studies in 1992/93, however, compared with the preceding year. This fall is due to a changed composition in the student population which arose with the discontinuance of the fourth year of the technical line and all students completing their studies after three years.

Higher transition frequency for women in most lines

In most lines, women have a higher transition frequency than men in the same line. In the long theoretical lines, the difference in

transition frequency between the sexes is smallest, at one or two percentage points. In the other lines, considered as a group, the difference for those completing their studies in 1992/93 amounts to some 10 percentage points between women and men.

Particularly big differences in the vocational lines

Women from vocational upper secondary lines have entered higher education to a greater extent than men. Of the approximately 12,600 men who completed one or other of the 2-year lines in 1992/93 — construction, electro and telecom technology, automotive technology or workshop technology — only one or two per cent had begun studies in higher education within three years. The 300 women completing these lines also have a low transition frequency, although it is higher than their male fellow-students.

If two of the vocational lines dominated by female students are studied, however, the 2-year health sciences line and the consumption line, comprising almost 7,800 women, the transition frequency is 19 and 9 per cent respectively. The corresponding proportion for men taking these lines is considerably lower, 13 and 1 per cent respectively.

More women than men apply for admission to higher education

Of all those who applied for admission to higher education in the autumn of 1996 and who had not applied before, 60 per cent were women and 40 per cent men. This distribution has on the whole remained unchanged in recent years. Among new students in higher education in 1995/96 the proportion of women and men is 36 and 44 per cent respectively. The lower difference among those admitted than among those applying is due to the admission of relatively more men than women.

Programmes offered in higher education better adapted to male demand

Relatively more male than female applicants are admitted to higher education. This is due to women and men applying for different programmes to a great extent. The pressure of applicants is not as great in the powerfully expanded engineering (shorter and longer duration) programmes, which men have as their first choice, as it is in the programmes at health science colleges that women have as their first choice. The health sciences sector has not been expanded in the same way.

Despite the fact that women are more dependent than men on further training at

Transition frequency to higher education within three years for those completing upper secondary lines in 1986/87, 1989/90 and 1992/93. Per cent. (See note 1 page 29)

Line categories/lines	1986/87		1989/90		1992/93	
	Women	Men	Women	Men	Women	Men
3/4 year theoretical lines	42	38	51	51	63	61
of which Humanities	42	41	48	47	55	58
Social sciences	53	40	59	46	65	55
Economics	22	26	31	32	45	43
Natural science	72	63	81	77	88	86
Technical yr 3	67	56	81	76	78	70
Technical yr 4	37	31	37	34	63	48
2-yr theoretical lines	20	9	26	11	23	12
2-yr vocational lines	11	3	10	3	11	4
3-yr vocational lines	–	–	15	7	17	6
All lines	25	17	31	26	39	31

an institution of higher education, the programmes on offer in higher education are better adapted to male than to female interests. In this situation, central government has chosen to try and modify the orientation of women's interests. A drive to encourage technical programmes is considered to be better able to develop Sweden than devoting resources to training programmes leading to work in the public sector.

Grades and frequency of transition

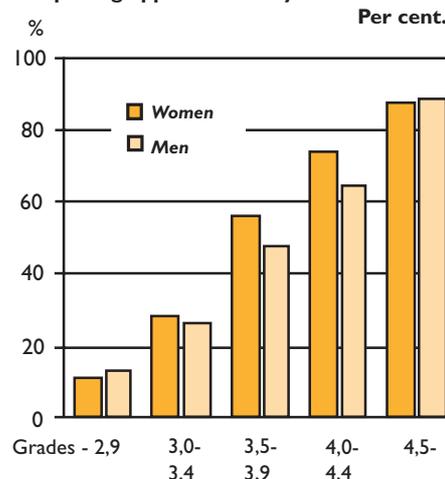
Grades are decisive for transition frequency

The diagram shows that the transition frequency to higher education within three years for those completing their upper secondary studies in 1992/93 increases from just over 10 per cent in the under 3.0 grade group to almost 90 per cent in the group with at least 4.5. For the total groups with the highest and lowest grades the transition frequency is roughly the same for women and men. In the other grade groups, women have a higher transition frequency than men.

A big difference between different upper secondary lines

Among women and men who completed the natural science line or the 3-year technical line, approximately half of those with an average grade of below 3.0 began studies in

Transition to higher education within three years in different grade groups for those completing upper secondary lines in 1992/93. Per cent.



higher education. In all grade groups these lines have the highest transition frequency.

The lowest transition to higher education among the longer theoretical lines, in almost all grade groups, is found among students completing the economics line. Women have a higher transition frequency to higher education from vocational lines than men in all grade groups. This is linked to the fact that men and women to a great extent chose different lines and that there are differences in transition frequency between lines.

For both women and men there is a higher transition frequency in all grade groups from the 3-year vocational lines as compared to the 2-year vocational lines.

Students completing upper secondary lines in 1992/93. Transition to higher education within three years up to 1995/96, for different grade groups¹⁾. Per cent. (See note on page 29)

Line categories/lines	Women					Men				
	Grade group (see explanation)					Grade group				
	1	2	3	4	5	1	2	3	4	5
3/4 year theoretical lines	25	55	78	91	96	29	62	83	92	97
of which Humanities	20	51	71	87	91	34	56	73	88	94
Social sciences	26	57	79	92	97	25	54	78	89	97
Economics	14	40	68	84	93	15	43	72	89	94
Natural science	52	81	91	95	99	49	81	92	95	99
Technical yr 3	50	77	93	98	98	38	77	91	95	99
Technical yr 4	45	63	76	86	92	30	55	71	80	84
2-yr theoretical lines	5	15	35	58	73	4	11	24	38	63
2-yr vocational lines	1	5	22	39	48	1	3	8	11	28
3-yr vocational lines	2	8	28	52	67	1	5	10	20	33
All lines	11	32	54	74	87	13	30	47	65	88

¹⁾ 1 = -2,9, 2 = 3,0-3,4, 3 = 3,5-3,9, 4 = 4,0-4,4, 5 = 4,5-

From girl to guy and finally woman

Interview with Margareta Norell, professor of integrated product development at the Royal Institute of Technology in Stockholm

In the magnificent yellow building at 15, Fiskartorpsvägen in Djurgården you will find the workplace of Margareta Norell, professor of integrated product development at the Royal Institute of Technology. Along the traditional institutional corridors the rooms lie in a row. Photographs of the occupants reveal that the old maternity hospital has been transformed into a male domain. But on the third floor, as far to the right as you can go, Margareta Norell will be found sitting in a room lit by spring sunlight with pale green horse chestnut leaves outside her window. She is not the only woman in the building. Far from it. But by reason of her title she is one of the very few women at the absolute summit of the academic system. Not only that, but her subject is technology, regarded by many as home turf for men and a black hole for women. Margareta Norell's professorship is completely new. The path to the top has hardly been a smooth, straight run.

"When I was a student of technology in the 1970s, women's ideas were not particularly welcome. As a result it took some time for me to become both an engineer and a woman."

Margareta Norell adapted to the circumstances around her and became one of the guys.

"It was a practical survival strategy, which I hope the women studying at technical universities today won't have to go through."

Being one of the guys meant never revealing anything that could be interpreted as feminine. Not decorating your workroom or expressing yourself emotionally like an old granny.

"At the same time I sympathized with the movements of '68 and was all in favour of standing on the barricades with a clenched fist demanding change."

But that time is over. Nowadays professor Norell describes her struggle in the following terms:

"I believe in the power of good examples. To demonstrate quality in research and training done by both women and men. Good results influence the system from within, slowly but surely. I have chosen a strategy I believe in in relation to equal opportunities, and it is not revolutionary."

After completing her studies, Margareta Norell worked for a long time outside the academic world. The next time she entered it was as a lecturer at the Institute of Technology. By then she was the mother of two children. And regarded herself as a woman.

"I was over thirty and secure in my professional role. It was no longer necessary to act like a man."

In full career, Margareta Norell made headway towards new objectives. After teaching came research and a further two children. She does not consider herself a very suitable role model for young women, however.

“I have done more than I needed to. My personality is incredibly energetic, and my level of activity is actually rather speedy.”

Being the mother of small children did not get in the way of Margareta Norell’s research.

“I took my pram with me to people I was going to interview. And I think it helped a lot of the time, as the presence of a small child affects the atmosphere in a room. It might be worth taking an empty pram along next time,” she says, and has a good laugh.

Margareta Norell has also held a professorship in Norway for a year. At the Royal Institute of Technology she works for changes and increased gender equality. She believes that the two go hand in hand, and explains:

“I believe we need a new perspective on technology. Our educational programmes must be modified and adapted to the needs of society. We must reach a stage where every engineer has the attitude that technology exists for the benefit of people and not vice versa.”

This autumn she will be starting a new partial programme within the graduate engineering programme. It is a full one-year course in integrated product development. The course description emphasizes a holistic perspective. A little of the image of an institute of technology as sluggish, traditional and male is chipped away.

“The only thing that is stable in the world is change. You can be quite confident of that. But I believe that all change must take time. And in this case I see the Royal Institute of Technology as being a very large ship, and such vessels take a long time to turn round.”

Margareta Norell does not believe in tailor-made courses specially devised for women, or special admission tracks for women alongside the usual channels.

“Special openings imply weakness, and that is not something that will promote gender equality. Carrots and sticks are meaningless, as they will be seen through by sensible young women and men.

“The lower percentage of women than men at the Royal Institute of Technology gives us something concrete to work with,” considers Margareta Norell, and continues, “but men and women do not work under the same conditions. What is important here is to discover the utility of both perspectives in a way that takes things forward.”

Society is full of people who may be divided into different categories. Sex is only one of these and it is not necessarily the one that Margareta Norell sees as the most important in her drive for reform.

“What is needed is greater social relevance. It is a question of focusing more on the human aspect. And getting engineers to see themselves as builders of society.”

Margareta Norell believes that would give technical programmes and professions both enhanced status and new conditions of work.

By Malena Bång

The basic year

The basic year in higher education

In the autumn of 1992, the technical-natural science basic year was instituted on a large scale at 26 institutions of higher education. The basic year is a one-year preliminary course intended to provide course eligibility for studies in higher education in technology and natural science, especially for people with an economics or social science orientation from upper secondary. The basic year was introduced with a view to increasing the recruiting base for these subject areas and to stimulate women to apply for technical and natural science programmes.

As a rule, those admitted to a basic year place in higher education also receive a guaranteed place in the following programmes. The basic year has two main orientations, a technical basic year with an orientation towards engineering and shorter and longer programmes, and a natural science basic year with an orientation towards teaching programmes and other natural science programmes.

Somewhat more men than women in the basic year courses

During the academic years from 1992/93 to 1995/96 the number of students registered

in the basic year increased from approximately 1,000 to almost 2,800, and rather more than half were women. There were certain gender differences in the various orientations. The skew is however significantly smaller in the basic year than in the corresponding programmes of higher education. The proportion of women in the basic year with an orientation towards longer and shorter engineering was 48 and 39 per cent respectively in 1995/96. Among new students in the corresponding higher education programmes in the same year the proportion of women was 23 and 19 per cent respectively.

Activities in 1994/95 for the basic year cohort of 1993/94. Per cent.

	Women	Men
<i>Higher education:</i>		
Engineering (long)	8	14
Engineering (short)	14	29
Teaching (maths-science)	30	8
Natural science	7	5
Other higher education	26	21
Not in higher education	15	24
All	100	100

More women to natural science and technical programmes after the basic year.

One year after doing the basic year in 1993/94, 85 per cent of women and 76 per cent of men had places in higher education. The

Number of students registered in the basic year by orientation. Total and proportion of women.

Orientation	1992-93		1993-94		1994-95		1995-96	
	No.	% w.						
Engineering (long)	69	36	180	42	130	48	120	48
Engineering (short)	460	41	630	37	730	35	1,050	39
Engineering (long & short)	-	-	-	-	-	-	420	43
Teaching (maths-science)	280	75	480	80	570	75	720	78
Natural science	140	62	190	57	91	58	120	64
Other orientations (incl. medicine)	60	53	60	58	270	49	350	49
All	1,010	54	1,540	54	1,780	52	2,770	52

commonest choice for women was teaching programmes, 30 per cent, and for men engineering, 29 per cent. This reflects the orientations of women and men during the basic year. Among those who had taken the basic year in previous years there were similar differences between women and men and their choice of higher education programmes.

The basic year in local authority administered adult education

Better regional distribution a goal

In the academic year of 1995/96 a basic year was also instituted in local authority administered adult education. One of the motives behind this was to enhance regional distribution. There were 1,500 places in 1996. In the following year the number of places had grown to 4,000.

It is not possible to compare directly the basic year in higher education and in local authority administered adult education. There are differences in such things as the previous level of knowledge that is required. Local authority administered adult education does not always demand that students have basic eligibility for higher education, which means that students without eligibility will have to supplement

their school grades before getting a chance to enter higher education.

Another important difference is that the basic year in local authority administered adult education is targeted on the unemployed.

Approximately as many women as men take the local authority administered adult education basic year, but there are large regional variations.

Fewer proceed directly to higher education programmes

Of the basic year cohort in local authority administered adult education in 1995/96, only half went on to higher education in the following autumn term. The majority, 40 per cent, were studying some natural science or technical programme of higher education. The total proportion was lower than for those taking the basic year in higher education.

The proportion of women continuing to higher education from local authority administered adult education was lower than the proportion of men. From the basic year at an institution of higher education a greater proportion of women than men went on to higher education.

Positively discriminated

Interview with Pia Fridhill, Managing Director of HMS Sensors AB, Germany

Pia Fridhill qualified as a development engineer at the university college of Halmstad in southwestern Sweden. When she started, she was one of nine girls in a group of 50. When they graduated four years later, there were five girls left.

“The fact that there were so few of us meant that we developed a very special sense of community. We formed a sisterhood and that relationship is still important to us.”

The Centre for the Development of Working Life at the college had many projects under way that were clearly visible to the students, says Pia Fridhill.

“The atmosphere of the college is good. But there was a lot of talk about equal opportunity, perhaps even too much at times.”

Pia Fridhill thinks that people’s views on gender equality are a generation issue, and that she and her contemporaries have a natural and self-evident relationship to the concept. Even though she sometimes felt that the guys on her course didn’t really take the girls seriously.

“Sometimes you would hear comments such as ‘Oh, so you managed to get through that exam, then...’ and that wasn’t much fun. But perhaps we should forgive the boys for it.”

Pia Fridhill offers to forgive them because she still sees remnants of gender prejudice lingering.

“Of course it’s impossible to change people’s attitudes overnight. When you speak about gender equality you must remember that not all women are interested in it either. But it’s easier to pick on the men.”

At the same time, young women are working at removing these remnants merely by having a quite different attitude from the traditional woman’s role, in Pia’s view.

“We are self-confident and don’t need so much outside encouragement. That attitude is universal among the girls at the college.”

When Pia Fridhill applied for her post after college she got it despite not being completely ready with her degree. The fact that she had a few exams to resit, all of them in technical subjects, didn’t worry her employer.

“I mainly got the job on the basis of my personal qualities. And of course I get different treatment because I’m a woman. But it’s positive. My boss appreciates my way of thinking and working, and sees that it’s different from the guys.”

Pia Fridhill is successful. In four years she has gone from a temporary project position to become managing director of the spin-off company the project resulted in. This autumn she will be moving to Germany with the company, because most of her customers are there.

She is not prepared to endorse the claim that it is the college and its atmosphere that lie behind her success. She considers it due to her own drive and sense of purpose. But she emphasizes that there is an atmosphere there that encourages women and that the girls attending the college have a lot of self-confidence.

By Malena Bång

Basic training in higher education

The expansion of higher education

The number of places available in higher education started to be expanded at the end of the 1980s, mainly by way of introducing shorter engineering programmes. Subsequently a powerful general expansion of higher education took place. The rules of admission were modified in the autumn of 1991 in order to increase the number of younger students, among other reasons. This in conjunction with a difficult labour market has led to more and more people—especially among younger age groups (21 years old or younger)—studying a programme in higher education.

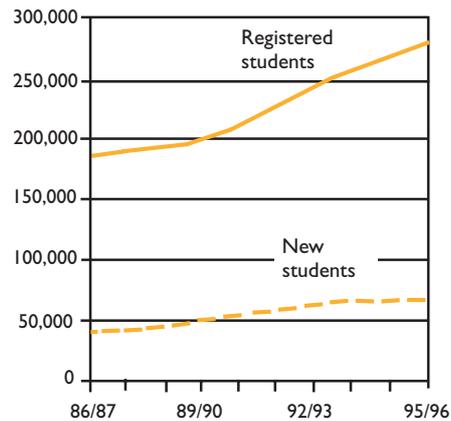
Almost 60 per cent increase in new students

The number of students starting a programme in higher education for the first time, new students, increased between the academic years 1986/87 and 1995/96 from approximately 42,000 to 66,000, an increase of 57 per cent. The proportion of women among new students in higher education has decreased from 58 to 56 per cent.

The proportion under the age of 22 has increased most for men

The proportion of new students under the age of 22 increased during the period from 46 to 51 per cent. In the academic year 1995/96, almost half of both women and

Number of new and registered students 1986/87 to 1995/96.



men were under the age of 22 when they started their higher education. The increase of the number of younger students has been greater for men than for women.

An almost 60 per cent increase in all students

During the period under consideration the group of all registered students increased by 58 per cent from approximately 181,000 to 286,000. The proportion of women has remained fairly constant during the period at 57 per cent. The increase in the number of all registered students has the same causes as the number of new students, but is also due to the extension of certain programmes and that those staying on at college have increased both before and after taking a degree.

The higher education reform of 1993

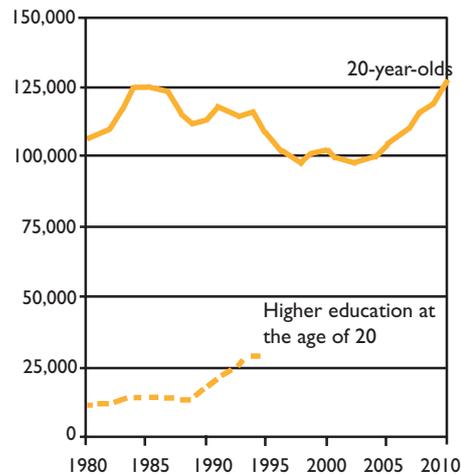
On 1 July 1993 a new Higher Education Act and higher education ordinance came into force. The general lines were abolished and a new system of degrees was introduced. The reform meant that central government, while stipulating certain guidelines, principally of a financial character, delegates decisions concerning the orientation of the educational programmes being offered within basic higher education to the individual institutions of higher education. As of 1993/94, basic higher education is organized in the form of courses and programmes. For programmes leading to professional degrees there are centrally decided national objectives (see also section on concepts and definitions on page 72).

Commenced higher education in different year-groups

The number of 20-year-olds may be used as a coarse measure of the recruitment base for higher education. The size of this group and its previous studies at upper secondary are significant for the number beginning higher education. In the early 1990s, some 90,000 students completed upper secondary lines, about half of them having followed long theoretical courses.

The diagram shows the size of Sweden's cohorts of 20-year-olds from 1980 to the present and projections until 2010, along with the numbers who have commenced higher education at the age of 20 up to the academic year of 1995/96.

Number of 20-year-olds 1980-2010, and number beginning higher education up to 1995/96.



Every fourth 20-year-old in higher education in 1995/96

When the year-groups born from 1960 to 1968 were 20 years old, 11 per cent of them had started studies in higher education. The great increase in the number of new students in higher education led to almost every fourth 20-year-old having started higher education at the age of 20 in 1995. There is, however, a tendency for the rate of growth to level off.

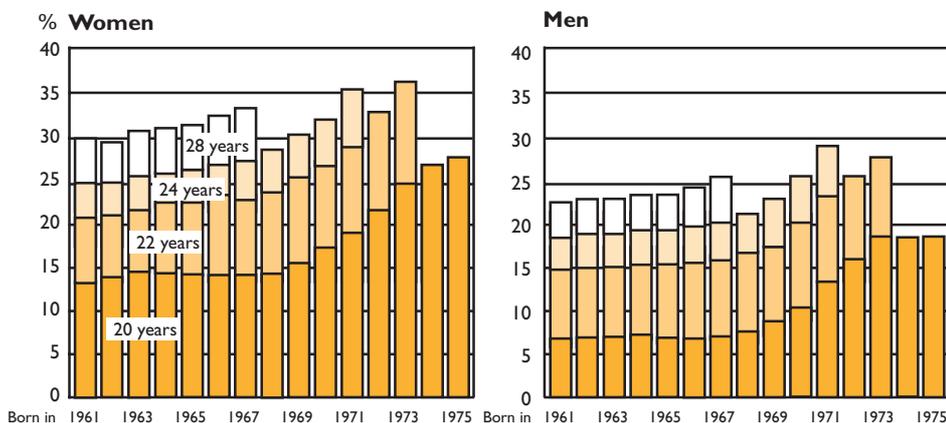
The proportion commencing a programme of higher education after the age of 20 has not increased nearly as quickly as in the age

groups up to the age of 20. The increase for older students only amounts to a couple of percentage points.

More women than men begin studies in higher education

In the age group born in 1975, 29 per cent of women and 20 per cent of men began a programme of higher education at the age of 20. The difference between the sexes is somewhat greater by some percentage points than it was for those born in the early 1960s. The proportion of women and men in an age group beginning a programme of higher education between the ages of 21 and 28 is approximately the same.

Proportion of age groups born between 1961 and 1975 who began higher education at the ages of 20, 22, 24 and 28. Per cent.



New students in higher education

From sectors to subject areas

The division into lines and sectors within higher education after 1977 disappeared with the higher education reform of 1993. Courses of education taken from the academic year of 1993/94 are categorized in the statistics into subject areas in two main groups: studies leading to a professional degree and other studies. Sectors and subject areas are not directly comparable.

A third of all students work for a professional degree

Of those beginning studies in higher education for the first time — new students in higher education — rather more than a third were studying for a professional degree in 1995/96. The proportion has decreased over the past three years.

More students studying technology — including women

In the process of expanding higher education great efforts have been made to promote technical programmes of study. The new engineering programmes initiated in 1988/89 represent the greater part of this increase.

Within the former technical sector almost 80 per cent of new students were men up until 1992/93. In the past three years, the proportion of female new students has increased in the subject areas of technology and natural science

No increase in subject areas dominated by women

The expansion in technology has no equivalent in the health science and teaching areas, which are dominated by women in numerical terms.

Social science orientation commonest among those not studying for professional degrees

The biggest group of new students in higher education, some two thirds, does not study for a professional degree but for a more general degree or only takes certain courses. The increase in the number of new students is greatest in this group.

The commonest orientation for these studies was (law)/social science. Almost as many women as men chose this orientation. The commonest single subject is business administration.

Number of new students in higher education from 1993/94 to 1995/96, by subject area. Total and proportion of women.

Subject area	1993/94		1994/95		1995/96	
	Number	% w.	Number	% w.	Number	% w.
Professional degree studies	25,500	55	23,400	55	24,300	54
Humanities and theology	210	58	160	57	170	55
Law and social science	1,600	68	1,600	68	1,500	69
Teaching	8,000	76	6,900	75	6,600	76
Technology and natural science	9,700	21	8,900	20	10,100	23
Agriculture and forestry	360	35	350	38	420	42
Medicine and odontology	740	51	650	62	530	58
Health science and care	4,600	88	4,500	88	4,500	87
Fine arts	320	47	330	47	370	49
Other studies	36,000	55	39,500	56	42,100	57
Humanities and theology	11,900	65	13,100	66	14,400	65
Law and social science	17,700	53	19,600	54	20,800	54
Natural science	5,500	38	5,600	38	6,400	42
Technology	2,300	21	2,600	23	2,900	26
Medicine	240	66	360	65	580	73
Health science and care	1,210	88	1,300	87	150	84
Art & practical/aesthetic programmes	410	60	480	46	650	55
Other subjects	370	74	520	73	380	76
Total	61,500	55	62,900	56	66,300	56

Ten major programmes

Changes affect comparability

During the period under consideration, certain programmes have undergone great changes — this is especially the case for teaching and (short) engineering programmes — which causes problems in relation to comparability. The changes concern new students in upper secondary teaching programmes, for instance. The proportion of men with this orientation diminished greatly, to only 40 per cent of new students in 1995/96.

Only slight changes in the proportions of women and men

In most of the ten programmes discussed leading to professional degrees (or the corresponding lines), the distribution of the sexes among new students has only changed by a few percentage points between 1986/87 and 1995/96.

The great efforts made to expand both short and long engineering programmes has led to a large number of new students in these programmes. A recruitment objective for programmes in technology and natural science has been to increase the proportion of women. A certain increase in the proportion of women has also taken place, but the increase only amounts to one or two

percentage points. The increase in the proportion of women has been greater in the medical programmes, rising from 46 to 51 per cent of new students.

Risk of teaching becoming a single-sex profession

The younger the children to be taught, the greater the proportion of women in the teaching programmes. This is a relationship that has held for a long time. In the section on the educational level of the population (page 16), the proportion of women in different age groups for various groups of teachers was reported.

Among teachers, there is a trend towards a growing proportion of women in the younger age groups. This trend will continue, because to a greater and greater extent new students in teaching programmes are women.

In the pre-school teaching/recreation instruction programmes, the proportion of men has increased to 14 per cent. The change may be due to a change in the composition of the new students, however, with an increasing proportion having an orientation towards recreation instruction. In this programme the proportion of men is greater than in the pre-school teaching orientation.

New students in ten major programmes for professional degrees/corresponding former lines¹⁾.

Programmes/corr. lines	1986/87		1989/90		1992/93		1995/96	
	No.	% w.						
Engineering (short)	1,120	18	2,940	17	5,830	16	6,280	19
Engineering (long)	4,110	20	4,260	19	4,840	20	5,900	23
Law	1,450	51	1,220	55	1,460	52	1,600	54
Social work	1,020	81	1,000	83	1,100	81	1,090	78
Nursing	3,220	88	4,380	89	4,240	83	3,670	87
Medicine	830	46	860	47	840	43	900	51
Child and youth training	3,820	91	4,360	92	4,860	90	2,560	86
Teaching (grades 1-7)	1,070	79	1,380	85	2,970	83	2,890	82
Teaching (grades 4-9)	880	66	890	73	1,730	62	2,010	65
Teaching (upper secondary)	790	48	1,140	54	1,690	52	1,720	60

¹⁾ Great changes have occurred in the period under consideration in relation to teaching and engineering programmes, affecting comparability.

Registered students

A registered student is a person registered for a course in basic higher education. The scope of the course can range from one or two points upwards.

Stable distribution of women and men in different sectors

During the period in which sectors were used to categorize the educational activities in higher education, the distribution of registered women and men between the sectors was highly stable. The proportion of women among those registered has amounted to approximately 57 per cent per year in total.

Similar distribution of registered and new students in subject areas

The distribution of registered women and men over subject areas closely follows the

data previously presented for new students. Registration data are reported per autumn term and the latest available figures at this writing were for the autumn of 1996.

Clear increase in the proportion of women studying technology and natural science

The most recent registration data for the autumn of 1996 indicate a continued trend towards a growing proportion of women in the areas of technology and natural science.

This trend has been particularly marked among students who are not studying for a professional degree. From the autumn of 1994 to the autumn of 1996 the proportion of women in this group has risen by some six percentage points. Among those studying for a professional degree, the corresponding increase amounts to three percentage points.

Number of registered students by subject area in the autumn of 1994, 1995 and 1996.

Total and proportion of women.

Subject area	Autumn 1994		Autumn 1995		Autumn 1996	
	Number	% w.	Number	% w.	Number	% w.
Professional degree studies	101,500	54	104,700	54	110,800	54
Humanities and theology	1,110	56	1,010	54	920	55
Law and social science	10,000	64	10,300	63	10,700	64
Teaching	31,600	76	31,100	75	31,700	75
Technology and natural science	35,300	21	37,700	22	42,100	24
Agriculture and forestry	1,500	44	1,670	50	1,730	52
Medicine and odontology	6,550	52	6,430	53	6,450	53
Health science and care	13,700	87	14,600	87	15,400	88
Fine arts	1,880	54	1,910	53	2,000	51
Other studies	129,800	57	141,300	58	149,200	59
Humanities and theology	40,500	64	44,400	64	46,800	65
Law and social science	69,900	54	75,100	55	78,100	56
Natural science	17,800	39	20,200	43	22,400	45
Technology	7,200	24	8,220	29	10,100	31
Medicine	1,200	72	1,880	71	1,920	71
Health science and care	7,060	88	8,470	89	8,350	90
Art & practical/aesthetic programmes	1,440	57	2,070	58	2,430	58
Other subjects	1,940	73	1,410	71	1,870	74
Total (net)¹⁾	231,300	56	246,000	56	260,000	57

¹⁾ A student may be registered for courses in a number of different subject areas during one and the same academic year. For this reason the total number of registered students per area greatly exceeds the net total of registered students.

Foreign students registered in basic training

The number of persons with foreign citizenship in basic Swedish higher education amounted to just over 11,000 in the autumn term of 1993 (incl. those of unknown citizenship and stateless persons). This group constituted some five per cent of the 220,000 students registered that term. The corresponding proportion was approximately the same five years earlier in the autumn of 1988.

Foreign citizenship among registered students (five largest countries).

Country	Autumn 1988		Autumn 1993	
	Total	% w.	Total	% w.
Finland	2,340	77	2,050	80
Iran	1,380	23	1,580	45
Norway	810	49	890	60
Germany	390	53	590	53
Denmark	360	52	530	59
Total foreign¹⁾	8,850	52	11,100	57
Total regist.	160,400	56	220,100	56

¹⁾ The number included 470 people of unknown citizenship or stateless in the autumn of 1988 and 1,700 in 1993.

The proportion of women with foreign citizenship in the autumn term of 1993 was approximately the same as for all registered students, 57 per cent. The proportion of women among foreign students thus rose from 52 per cent in 1988.

Finnish women the largest group

Among registered students in the autumn of 1993 with foreign citizenship, Finns clearly constituted the largest group followed by the Iranians. These two groups are also the largest of all those with foreign citizenship in Sweden in the age group 18-44. The high proportion of women among the Finnish students is partly explained by the presence of significantly more women than men with Finnish citizenship in the 18-44 age group

in Sweden. Finnish women are also clearly the largest single group, with 1,630 students, followed by Iranian men, 870.

Every fourth student of odontology a foreign citizen

As among Swedish students the largest group of students with foreign citizenship was found registered to study for a non-professional degree in the autumn of 1993, approximately 3,800 women and 2,700 men (including the group with unknown citizenship or stateless).

In the odontology programme almost 25 per cent of the students had foreign citizenship, which was the greatest proportion in programmes leading to a professional degree in the autumn of 1993. In medicine, the proportion of students with foreign citizenship was 10 per cent. Among students in programmes leading to professional degrees the greatest number with foreign citizenship was found in long engineering programmes, but since these programmes have a large total number of students, foreign students only constitute four per cent of total.

Registered students with foreign citizenship studying for professional degrees in the autumn of 1993¹⁾. Number and proportion for both sexes.

Programme	Women	%	Men	%
Child and youth training	350	3	28	3
Engineering (long)	180	4	730	4
Teaching (grades 1-7)	180	2	28	2
Teaching (grades 4-9)	100	2	41	2
Engineering (short)	74	3	320	4
Law	97	4	59	3
Medicine	230	11	230	10
Nursing	410	3	74	2
Social work	150	5	14	2
Odontology	140	23	150	25

¹⁾ Only programmes with at least 100 foreign students are given here. The number includes those of unknown citizenship or stateless.

Swedish students abroad

The number of students pursuing post-upper-secondary studies abroad has been increasing steadily since new and more liberal rules concerning the allocation of grants for studies abroad came into force in January 1989.

Students abroad (free movers). Total and proportion of women.

	Number	% Women
1991/92	8,100	59
1992/93	11,300	58
1993/94	13,700	58
1994/95	13,800	59
1995/96	14,700	57

The largest group of those studying abroad are students who arrange a study place on their own initiative. Such students are usually referred to as “free movers”. They amounted to approximately 14,700 in 1995/96, including 57 per cent women. The group of free movers has been identified by their receiving specially ear-marked study allowances for studies abroad. The others, students studying abroad by way of special exchange programmes, were estimated to number 4,000 to 5,000 students in the academic year of 1995/96.

Students abroad in 1995/96 (free movers). Distribution by groups of countries. Per cent.

	Women	Men
Nordic countries	6	6
Non-Nordic Europe	60	41
North America	27	44
Rest of the world	7	9
Total	100	100
All	8,400	6,200

North America popular among men

Among those studying abroad (free movers), North America was popular — 44 per cent of men and 27 per cent of women studied there in 1995/96. The rest of Europe,

excluding the Nordic countries, was selected as a first choice by women, 60 per cent, while the proportion of men was 41 per cent. Less than 10 per cent of women and men studied outside Europe and North America.

Among free movers, too, there were differences in orientation between women and men

In the same way as there are differences in the choice of programme orientation between women and men in Swedish higher education, so also there are differences among students abroad (free movers). Almost 40 per cent of women had chosen courses with an orientation towards the humanities — most often languages — while this proportion among the men in the study was only about half as large, 23 per cent.

Students abroad in 1995/96 (free movers). Distribution by orientation. Per cent.

	Women	Men
Humanities	39	23
Economics/social sciences /behavioural sciences	17	27
Technology/natural science	1	6
Art	16	12
Others	27	32
Total	100	100
All	8,400	6,200

Unusual to take technology/natural science

In the group of free movers it was unusual to find studies in the fields of technology or natural science both among women and men. This proportion was six per cent for men and only one per cent for women.

Among students in Swedish higher education this proportion is considerably higher. In the autumn of 1995, rather more than a quarter of all students were registered in one course or another in subjects in the technology/natural science field.

Level of achievement and degrees taken

Level of achievement 1995/96

Level of achievement is measured by comparing the number of year-achievements, that is to say completed credits, with the number of year-students. An achievement level of 100 per cent corresponds to 40 completed credits per year-student during the academic year. In this section, programme areas with at least 1,000 year-students in 1995/96 are discussed.

Great variation in level of achievement

In the major programme areas, the achievement level in 1995/96 varied between 78 and 97 per cent for women and 72 and 97 per cent for men. A number of programme areas have an achievement level of around 95 per cent for both women and men. This applies to teaching, odontology, medicine, health sciences and music. The lowest results were reported in the areas of theology, the humanities and social science.

Women have a higher achievement level

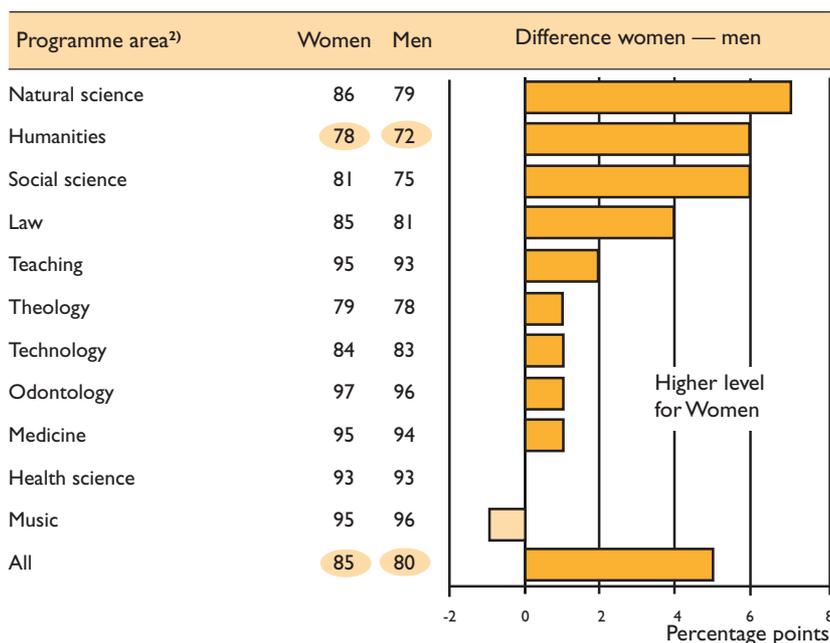
In total, women attained an achievement level of 85 per cent in 1995/96, which was five percentage points higher than men.

In nine of the programme areas for which data are reported, women had a higher achievement level than men. The greatest difference, seven percentage points, was in the natural science subject area. The difference was also great in the humanities and in social science.

The difference between the achievement level of women and men was about the same in the preceding year.

Therefore, women have a higher achievement level than men. On the following page it will be shown that women also have a higher frequency of degrees taken than men. That difference amounts to some ten percentage points after seven years' studies, a difference that remains in subsequent follow-ups.

Achievement level in per cent 1995/96¹⁾. (Year-achievements/year-students).



¹⁾ Only subject areas with at least 1,000 year-students are reported separately.

²⁾ Programme area is a categorization used by the Government among others for allocation purposes. The categorization differs from that of subject areas, which is based on the classification of courses by subject.

Frequency of degrees taken

The frequency of degrees taken is given here as the proportion of a year-group of new students having taken a degree after a certain number of years. The number of new students has increased, as shown above. It is primarily students taking individual courses that account for the increase.

Not everyone studies for a degree

Not every student entering higher education has the intention of taking a degree, and especially in the group studying individual courses there are many who never intended to study for a complete degree. For this reason the frequency of degrees taken is a crude measure of results achieved in higher education.

Decrease in degrees taken within three years

The frequency of degrees taken within three years has diminished over a long period of time (as is shown in the diagrams below). This decrease is especially great for the most recent year-group for which data is available, 1993/94. Only around 10 per cent of new students commencing in this year have taken their degree within three years. The decrease for this year-group is due to factors including the extension of certain major programmes that was implemented during the period.

Just over half take their degrees within seven years

Among new students that it was possible to follow for seven years, just over half took a

degree. The frequency of taking a degree after seven years for the most recently studied year-groups is a few percentage points lower. After seven years some 10 per cent of the new students remain registered without having taken a degree. For earlier new students that it was possible to follow up after eleven years, the frequency of taking a degree was 59 per cent.

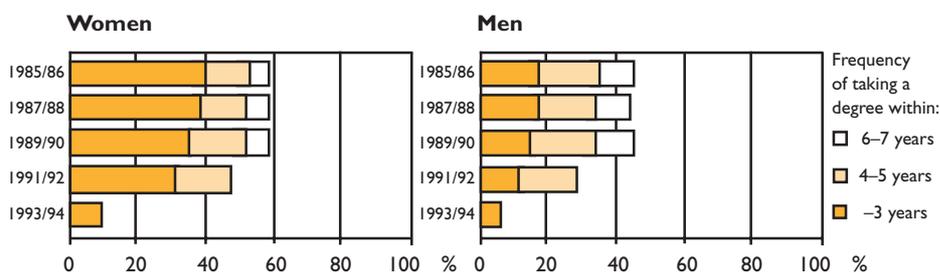
Higher frequency of taking a degree among women

In total, the frequency of taking a degree is some 10 percentage points higher for women than for men after seven years' studies. This difference remains after 11 years.

An explanation for the difference in the frequency of taking a degree between women and men is that women to a greater extent than men study short programmes in health sciences/care and teaching. These areas have generally speaking had a higher frequency of taking a degree for both sexes.

This, however, is not enough to explain the whole difference between the frequency of taking a degree for women and men. In three out of four lines with at least 200 new students, women have a higher frequency of taking a degree than men. Among new students in lines in 1989/90, women had an at least 15 percentage points higher frequency of taking a degree after seven years in training for pre-school teachers, laboratory assistants and junior pharmacists. The pattern was similar for previous year-groups followed up.

New students 1985-86 to 1993/94. Proportion taking a degree within 3, 5 and 7 years. Per cent.



Degrees

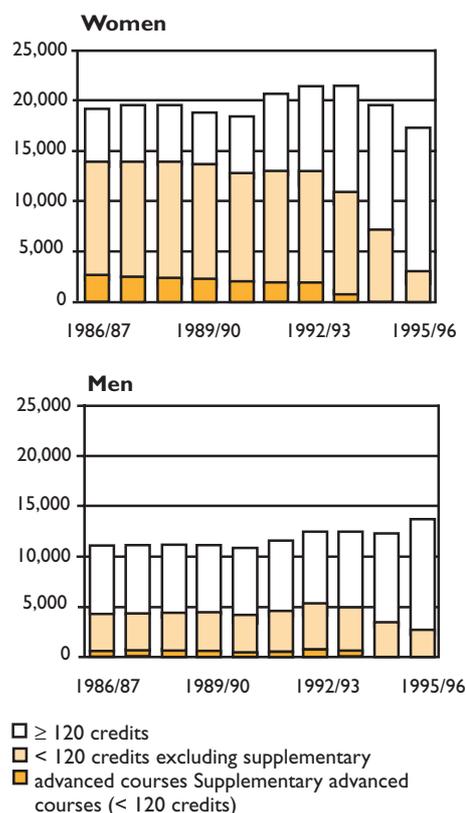
During the second half of the 1980s, the number of degrees in basic higher education totalled about 30,000 a year, of which about half were taken by women. The number of degrees increased in the early 1990s, but fell to previous levels in 1995/96.

Because a new degree system was introduced in 1993/94, degree data are not wholly comparable before and after this year. The number of degrees comprising less than 120 credits is now lower due to degree certificates no longer being given for programmes under 80 credits. This particularly affects many supplementary advanced courses in the health science area. These programmes were previously dominated by women. The new situation is also reflected in the reduction of the proportion of women among those taking degrees to 58 per cent in 1995/96.

Doubling of the number of degrees of at least 120 credits

Until the beginning of the 1990s, the number of degrees of at least 120 credits taken amounted to approximately 13,000 per year. Subsequently the number has increased and in 1995/96 it had risen to a little over 26,000. In addition to the drive to increase the number of long technical programmes, the increase is due to the reorganization and extension of certain programmes that previously comprised less than 120 credits. This is the case with respect to teaching and nursing programmes, for instance. In most of these programmes, women are in a clear majority. This

Number of degrees by duration of programme.



circumstance explains a great part of the increase in the number of women in programmes of at least 120 credits. The proportion of women in this group rose from 47 to 59 per cent in the period under consideration.

Earlier in the period considerably more women than men took degrees in programmes comprising less than 120 credits, including supplementary advanced courses.

Number of degrees by duration of programme. Total and proportion of women.

	1986/87		1989/90		1992/93		1995/96	
	No.	% w.						
< 120 credits excl supp. courses	14,900	74	15,000	73	15,700	71	5,300	53
≥ 120 p supplementary advanced courses	12,700	47	12,300	47	15,400	53	26,000	59
Total	30,700	64	30,100	64	33,700	63	31,600	58

Degrees by subject area

In the period between 1986/87 and 1995/96 relatively large changes occurred in the number of degrees taken in different subject areas.

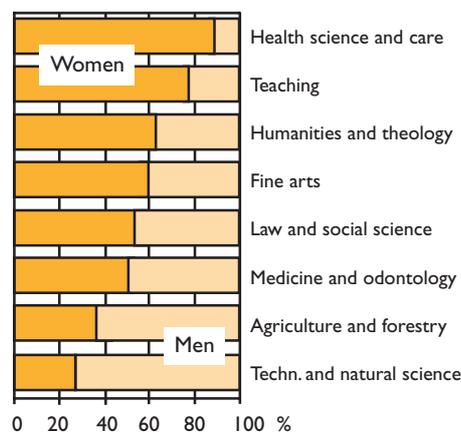
Great increase in technology/natural science

The number of degrees taken in programmes in the area of technology and natural science increased most during the period, from around 4,800 to 7,800 degrees per year. During the period, the number of women increased by 5 percentage points to 27 per cent. Thanks to the expansion of this area, this relatively moderate increase in the proportion of women nonetheless represents a doubling in the numbers of women taking degrees as compared with ten years previously.

Variations in teaching degrees

In the past decade, teaching programmes have undergone great changes. As a result of the introduction of the teaching programme for compulsory school teachers, there was a fall in the numbers taking degrees for a few years around 1990. In the academic year of 1995/96, the numbers taking degrees in the teaching area amounted to around 6,600, which is a decrease compared with the previous year. The proportion of women increased during the period. In the past two years, however, this proportion has decreased, due to a marked reduction in the numbers of degrees being taken in pre-school teaching and recreation instruction.

Degrees 1995/96 by subject area. Proportion of women and men.



Ninety per cent of those making up this group are women.

Big decrease in health science/care

The number of degrees in the health science/care area fell almost by half during the period under consideration. To a great extent, the decrease is due to the practical cessation of degrees being awarded for supplementary advanced courses. Another explanation is the extension of the nursing programme, which entails a temporary effect on outflow from the programme. The proportion of women taking degrees decreased in 1993/94 and 1994/95, only to rise again to 89 per cent in 1995/96.

Ten major professional degrees

In the academic year of 1993/94, a new degree system was introduced. In addition to three general degrees there are 50 or so professional degrees. Official national

Number of degrees by subject area. Total and proportion of women.

Subject area	1986/87		1989/90		1992/93		1995/96	
	No.	% w.						
Humanities and theology	1,320	61	1,250	66	1,360	67	2,010	65
Law and social science	6,430	55	7,070	55	7,890	57	9,020	55
Teaching	7,860	74	6,560	81	8,270	82	6,620	77
Technology and natural science	4,810	22	5,740	24	7,020	25	7,750	27
Agriculture and forestry	510	23	460	26	450	24	340	36
Medicine and odontology	1,210	48	930	46	1,020	50	1,110	53
Health science and care	8,120	91	7,720	90	7,280	89	4,320	89
Fine arts	360	48	320	58	360	55	390	60
Total	30,700	64	30,100	64	33,700	63	31,600	58

objectives exist for these. In this section, the data for ten major professional degrees will be presented along with corresponding data for degrees before 1993/94. Change in gender distribution has been greatest for those taking professional degrees in law and upper secondary teaching. The proportion of men decreased by 10 percentage points during the period from 1986/87 to 1995/96.

Gender distribution still uneven

Gender distribution in six of the ten degrees for which data are presented is still very uneven. The less well represented sex has a proportion of not more than 20 per cent (see diagram).

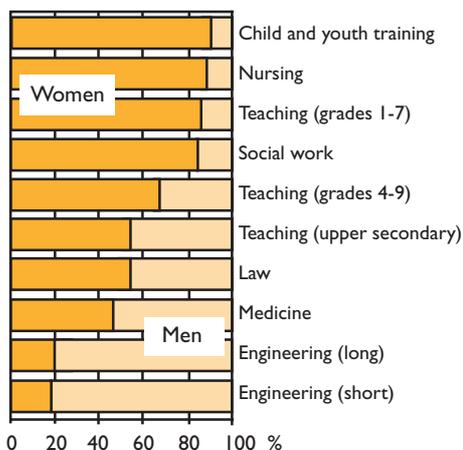
Big gender differences between different orientations of long engineering programmes

In the period under consideration, there has been a great interest in increasing the proportion of women in technical programmes. The proportion of women taking degrees has also increased somewhat in the long engineering programmes. The increase, to approximately 20 per cent of women, took place as early as the second half of the 1980s.

There are big differences between the various orientations, however. Half of the graduate engineers (long programmes) taking degrees with an orientation towards chemical technology and surveying were women, while the proportion of women was only

Ten major professional degrees 1995/96.

Proportion of women and men



10 per cent for those with an orientation towards electro-technology and computer technology.

There are corresponding differences in the short engineering programmes, too. This programme area as a whole was modified during the period under consideration, which makes comparisons difficult.

Fewer and fewer male teachers — is this a problem?

There has been less interest in reducing the skewed gender distribution in teaching programmes than in technical programmes, although the problems in this area are at least as great. Given the uneven gender distribution found among newly-graduated teachers, male teachers will become more and more uncommon (compare page 16).

Ten major professional degrees/corr.¹⁾ Total and proportion of women.

Degree	1986-87		1998/90		1992/93		1995/96	
	No.	% w.						
Engineering (short)	170	12	650	16	1,700	19	1,520	18
Engineering (long)	2,470	17	2,540	20	2,720	20	3,120	20
Law	630	46	660	45	840	51	860	56
Social work	950	83	790	83	740	84	730	84
Nursing	3,270	90	3,360	88	3,660	88	2,620	88
Medicine	890	44	710	43	750	45	690	48
Child and youth training	2,960	90	3,730	92	4,340	90	1,460	89
Teaching (grades 1-7)	1,290	76	440	89	1,110	88	2,260	85
Teaching (grades 4-9)	730	61	530	68	490	71	890	68
Teaching (upper secondary)	770	46	740	60	1,040	50	1,030	56

¹⁾ Great changes have occurred during the period under consideration in teaching and engineering programmes, which affects comparability.

Transition from basic training to postgraduate training

Men have a higher transition frequency

Only 3.2 per cent of the 97,000 women who took a basic degree in higher education between 1987/88 and 1991/92 had commenced a programme of postgraduate studies by 1995/96. The corresponding proportion among the 55,000 men who had taken degrees was 10.4 per cent. To a certain extent this difference may be explained women and men having different basic degrees, since not all basic degrees give eligibility for postgraduate studies. In principle it is necessary to have 60 credits in the subject in which postgraduate studies are to be pursued.

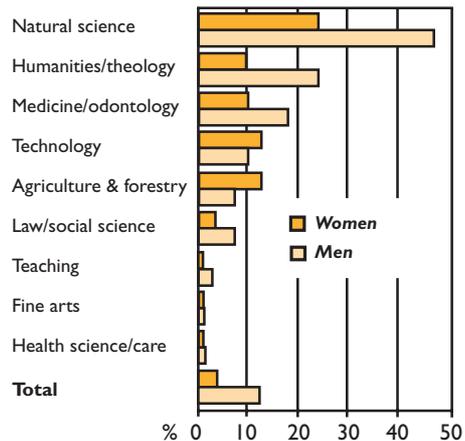
The transition frequency in the natural science subject area was highest by a clear margin, with a third of those taking degrees going on to postgraduate studies. Men have a higher transition frequency in all subject areas except technology and agriculture and forestry, as may be seen in the diagram. The explanation for the lower transition frequency for men in these areas is the large number of men in programmes of short duration, which have hitherto not given eligibility for postgraduate studies.

... even with the same basic degree

Even when women and men have the same basic degree, the transition frequency is higher for men, as may be seen in the table. Big differences, of 10 per cent or more, are to be found in programmes in biology, chemistry, medicine and for the BA.

It is also interesting to observe that in programmes of basic training in which women are numerically dominant — such as librarianship and liberal arts — men have more than three times the transition frequency of women.

Commenced postgraduate studies up to 1995/96 for those taking a basic degree between 1987/88 and 1991/92, by subject area. Per cent.



Transition frequency to postgraduate studies up to 1995/96. Per cent

Subject area ¹⁾	Women	Men
Humanities/theology	10.1	24.8
BA (fil kand)	22.9	47.0
Comparative religion	10.6	23.8
Librarianship	2.3	10.4
Law/social science	3.5	7.2
BA (fil kand)	14.2	23.2
Economics (new)	2.6	5.1
Law	3.4	5.9
Teaching	0.7	3.1
History/social science	2.5	11.2
Mathematics/science	4.5	10.1
Natural science	23.4	46.2
BSc (fil kand)	51.2	57.9
Biology	51.2	61.9
Chemistry	45.4	66.4
Technology	13.5	10.5
Chemical technology (long)	31.7	42.6
Mechanical technology (long)	12.7	14.8
Engineering physics (long)	35.1	38.0
Agriculture and forestry	13.4	7.9
Medicine/odontology	10.3	18.0
MD	11.5	20.3
Health science/care	0.5	1.0
Fine arts	0.7	0.9
Total	3.2	10.4

¹⁾ In addition to subject areas, data for certain degrees are also given.

How research can lead to change

Interview with Anna Wahl PhD (Economics), researcher and lecturer at the Stockholm School of Economics

Anna Wahl works at the Stockholm School of Economics. She represents a new kind of leader: the leader of the future. At least this is the opinion of the Junion Chamber of Commerce, which recently rewarded Anna Wahl for her ideas on leadership.

Just before the interview begins, Anna Wahl is busy in her office. Her well-filled bookshelves are neat and tidy, the desk is strewn with documents and the telephone must be put through the switchboard if a conversation of any length is to take place without interruption. She looks happy and a little surprised when the Junior Chamber of Commerce prize is mentioned. Researchers are perhaps not the first thing that springs to mind when you think of leaders.

“It can be motivated in part by the fact that I do research and construct theories regarding leadership. But in addition to this I view the knowledge I acquire as power and in that sense a means to exercise power.”

When Anna Wahl took her doctorate five years ago, she presented the first explicitly feminist dissertation in the field. She is a pioneer, and is working hard to broaden the field.

“When I wrote the dissertation, it was under great pressure. Since I knew that my subject was new, I made higher than usual demands on myself and the quality of my work.”

She works in an institution that is traditionally male-dominated. She conducts research into organization and leadership theory from a gender perspective. By way of interviews, she gathers material and with its aid she makes visible women and their position within organizations. This also sheds light on power relations between women and men.

“The gender perspective works both ways of course. It must be made clear that men, too, constitute a gender.”

The majority of both students and staff at the Stockholm School of Economics are men. This is the real challenge in making visible the need for feminist research. And making clear the importance of having gender-related perspectives in other research, too.

“The mere existence of feminist research at the institution has an affect on discussions and seminars. And that’s a good thing, since one goal is to reach out with the knowledge we have to those who do not have this as their main field of research.”

In contrast to many researchers, Anna Wahl does a lot of externally oriented work. She frequently gives lectures, often outside the academic world. And she has collected many reactions that prove just how sensitive and highly-charged issues like gender equality and feminism are.

“Gender equality is a political concept that is about politically initiated change with respect to equal conditions regardless of gender. The concept is not often used in research work. For me, on the other hand it is interesting to look at what happens in an organization that is to be ‘equalized’.”

But as a rule, before Anna Wahl gets that far she runs into ‘guard dogs’ in the form of obstinate, emotionally-based questions and comments from those to be interviewed or those listening to her lectures and it becomes difficult to conduct a relevant and objective discussion. And naturally Anna Wahl considers this to be frustrating.

“I have discovered that I often spent my time explaining what feminism wasn’t instead of finding room for the essential thing, which is speaking about feminist theory.”

In Sweden in 1977 many people think gender equality is something self-evident. It has been shown that above all men and young people consider that they are living in a society that offers equal opportunities. The main arguments are roughly that equal opportunities are more about how individuals concerned fight for their rights than about politically made decisions concerning equality measures.

“But the fact remains that there is a balance of power. The focus on the individual makes it appear as if possible differences can be explained away as a typical women’s problem with not being able to push personal interests sufficiently vigorously. That lets the system off the hook, and I think that’s daft.”

Anna Wahl takes certain definitions as her starting point, as do all researchers. One is that there is a gender order in society and that this order is based on male superiority and female subordination. This is something strenuously denied by the majority of those who hear Anna Wahl speak.

“For a long time this was an obstacle for me in my attempts to impart knowledge about feminist research. And it led to the development of the teaching model I call ‘the cloud’.”

To deal with the filter of prejudices and preconceived ideas that bubbled up as soon as the word feminism was mentioned, Anna Wahl launched a strategic attack. Nowadays she starts her sessions by getting her audience to associate freely around the word ‘feminism’. As the words pour out, she notes the commentaries and sorts them on a board. Gradually a pattern emerges and Anna Wahl can start explaining.

“Three headings are relevant in this issue, namely research, politics and ideology.”

Words belonging to one or other of these categories appear in three columns. The rest float in confusion over the organized categories. Around them Anna Wahl draws the contours of a cloud.

“The cloud can be given a heading covering anything from antifeminism to notions, misunderstandings and ignorance. I usually say that the cloud exists and is significant — but not in the context of my lecture.”

With the aid of this model Anna Wahl can move on in her explanations.

“The purpose of the model is to provide definitions of the concepts of feminism and feminist research and to see the links between them. In this way we also express what they don’t mean, by creating the cloud as a concept.”

A long article by Anna Wahl about the cloud was published in the December number of the journal for women’s science *Kvinnovetenskaplig tidskrift*.

Anna Wahl’s primary research area concerns management skills. She sees the creation of the cloud as a side-project. Like the book she is now writing in collaboration with her postgraduate students. Its title is “Irony and sexuality. About leadership”, and was chosen to arouse curiosity. The book is based on analyses of a novel, a television series and a number of newspaper articles. Anna Wahl lights up with enthusiasm when she talks about working with the book. Side-project or not, the smile reveals that this is a love-child.

Other researchers discuss alternative ways of transcending the barrier of prejudice, by way of adapting language and concepts, for instance. Gender research or research into sexual theory do not arouse such strong reactions. But Anna Wahl classifies her research as feminist and supports this with the help of the following definition of feminism:

1. Consciousness/knowledge of gender order with male superiority and female subordination at different levels and in different areas of society.
2. The desire to change things and create equal conditions for women and men, that is, to increase the influence of women in society.

“This means in brief that there is an imbalance which ought to disappear. Feminist research thus consists of the production of such theories about the gender order as are necessary to bring about change.”

By Malena Bång

Postgraduate training

New postgraduate students

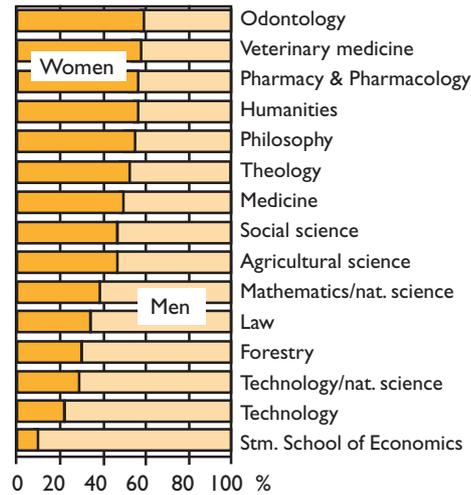
The number of new postgraduates has increased by 37 per cent over the past ten-year period

The number of new postgraduate students has increased by approximately 37 per cent during the period between 1986/87 and 1995/96, from 2,300 to 3,100 per year. About half of the new postgraduates may be found in the two largest faculty areas, engineering and medicine.

The proportion of women has risen to 40 per cent

During the period under consideration, the proportion of women among new postgraduates rose from 32 to 40 per cent. The proportion of women increased at all faculties with the exception of one or two of the smaller ones, in which the proportion of women varies greatly from year to year. In the academic year 1995/96, the proportion of women recruited was at least half in six of the fifteen faculty areas, which may be compared with only at one or two faculties in the academic year of 1986/87. In 1995/96, the proportion of women varied from 10 per cent at the Stockholm School of Economics to 59 per cent at the odontological faculty.

New postgraduate students by faculty, 1995/96. Proportion women and men



In large faculty areas, with at least 100 new postgraduate students per year, the proportion of women rose most at the faculties of mathematics/natural science and medicine. The increase for both faculties amounts to some 12 percentage points.

The composition of new postgraduate students is largely dependent on the existing recruitment base. The distribution between the sexes that is found in basic higher education is also reflected to a great extent in recruitment to postgraduate studies.

New postgraduate students at major faculties. Total and proportion of women

Faculty	1986/87		1989/90		1992/93		1995/96	
	No.	% w.						
Humanities	280	43	270	45	410	48	340	53
Social science	340	38	370	34	560	41	470	46
Medicine	490	37	560	38	760	41	780	48
Mathematics/natural science	220	27	300	35	390	38	310	39
Technology	570	21	570	20	780	24	760	24
Technology/natural science	120	28	120	26	160	32	150	32
All faculties	2,260	32	2,450	34	3,470	35	3,100	40

Active postgraduate students

The number of active postgraduate students totalled 15,500 in the autumn of 1995. Students with an activity level of at least 10 per cent are considered to be active. In addition there were “non-active” students, totalling almost 4,000 in 1995. The figures below refer only to active postgraduate students.

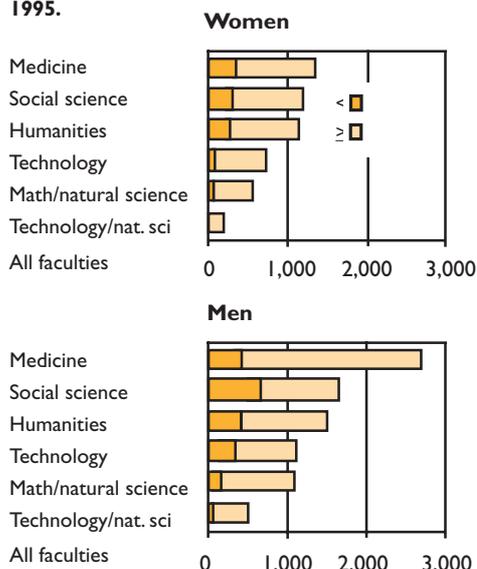
Women and men have a similar level of activity

Of students actively pursuing postgraduate studies in the autumn of 1995, some three quarters of both sexes had an activity level of at least 50 per cent. Approximately 40 per cent of both women and men were active full time.

Different levels of activity at different faculties

Just over a quarter of the active postgraduate students at the major faculties discussed (humanities, social science and medicine) had an activity level under 50 per cent. At the other faculties for which figures are

Number of active postgraduate students at major faculties, by level of activity autumn 1995.



given, only one tenth had such a low activity level. Postgraduate students at three faculties (mathematics/natural science, engineering and engineering/natural science) had a high activity level. The activity level is clearly correlated with study funding (see page 57).

Active postgraduate students at major faculties in autumn 1995, by level of activity

Faculty	No. reg.	No. active	25 %	50 %	75 %	100 %	Total
Women							
Humanities	1,340	1,080	27	19	8	45	100
Social science	1,470	1,160	27	22	14	36	100
Medicine	1,710	1,320	30	17	8	45	100
Math./natural science	660	580	12	11	32	46	100
Technology	1,000	770	12	14	32	41	100
Technology/nat. science	210	190	10	13	50	27	100
All faculties	7,310	5,890	23	17	19	41	100
Män							
Humanities	1,390	1,120	28	14	12	45	100
Social science	1,910	1,520	28	19	12	42	100
Medicine	2,130	1,640	36	16	8	39	100
Math./natural science	1,240	1,090	13	8	35	44	100
Technology	3,630	2,720	16	13	36	35	100
Technology/nat. science	560	490	10	10	45	35	100
All faculties	12,140	9,610	23	14	24	40	100

Almost 30 per cent increase in number of active postgraduate students

The number of active postgraduate students (registered postgraduates with an activity level of at least 10 per cent) increased by 28 per cent between the autumn of 1986 and the autumn of 1995, from 12,100 to 15,500.

Greatest increase in engineering

The increase in the number of active postgraduate students has been greatest within the engineering faculty (1,210, 53 per cent) followed by the faculty of medicine (510, 21 per cent) and then the faculty of social science (440, 19 per cent).

There has also been a great expansion of engineering programmes in basic higher education, while no corresponding increase has taken place in medicine.

Greater changes in the distribution of women and men in postgraduate training than in basic higher education

Between the autumn of 1986 and the autumn of 1995 the proportion of women has increased by eight percentage points from 30 to 38 per cent of active postgraduate students. The increase in the proportion of women has been greatest, 21 percentage points, in the faculty of veterinary medicine, which had a proportion of women of almost 60 per cent in the autumn of 1995. The faculty of pharmacy and pharmacology had an equally large proportion of women. At the faculty which saw the greatest expansion, the faculty of engineering, the proportion of women increased by seven percentage points to 22 per cent.

In the past ten years, a greater equalization of the proportions of women and men has taken place in postgraduate training than in basic higher education.

Active postgraduate students at major faculties. Total and proportion of women

Faculty	autumn 1986		autumn 1989		autumn 1992		autumn 1995	
	No.	% w.						
Humanities	1,850	47	1,890	48	1,920	47	2,200	49
Social science	2,260	37	2,430	39	2,410	40	2,700	43
Medicine	2,450	30	2,730	34	3,090	41	2,960	45
Mathematics/natural science	1,430	25	1,440	30	1,600	32	1,660	35
Technology	2,290	15	2,700	18	3,180	21	3,500	22
Technology/natural science	580	23	600	24	650	27	690	28
All faculties	12,100	30	13,090	33	14,360	35	15,500	38

Funding postgraduate studies

In a proposal submitted to Parliament in the autumn of 1997, the Government proposes that only those students obtaining a postgraduate studentship or having some other form of study funding should in future be admitted to postgraduate studies.

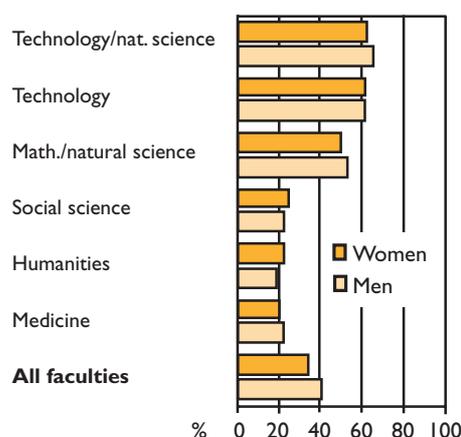
Almost 40 per cent had postgraduate studentships in the autumn of 1995

By the autumn of 1995 the commonest way of funding postgraduate training was already by means of a postgraduate studentship. Such positions were held by 35 per cent of women and 41 per cent of men. This proportion will increase as a result of the proposed changes in admission to postgraduate training.

According to a previous decision by central government, the training grant was to be phased out and replaced by postgraduate studentships, with no more training grants being approved after 1 July 1995. The proportion of those with training grants thus fell to only seven per cent in the autumn of 1995. A changed decision led to the reintroduction of the training grant, however.

The second most common form of funding, covering 19 per cent of both women and men, is some other kind of university post.

Proportion of active postgraduates with postgraduate studentships at major faculties in autumn 1995.



Large differences between faculties

The difference between study funding for women and men is less than the differences between the various faculties.

The largest proportion of those with postgraduate studentships may be found in the faculty of engineering/natural science followed by the faculty of engineering. The level of activity at these faculties is high, with 80-90 per cent pursuing at least half-time studies. The smallest proportion of those with postgraduate studentships is to be found in the faculty of medicine. A large proportion of postgraduates in clinical medicine have research-related employment instead.

Study funding for active postgraduate students in autumn 1995. Per cent.

Faculty	No. active	of which ≥ 50% level of activity	Study funding for active postgraduates in %				
			Training grant	Postg. student-ship	Other univ. post	Scholarships	Research-related work
Women							
Humanities	1,180	73	3	20	14	12	5
Social science	1,160	75	3	26	24	11	11
Medicine	1,320	70	16	22	14	16	32
Math./natural science	580	88	19	51	34	13	7
Technology	770	88	1	62	13	9	10
Technology/nat.science	190	90	12	61	38	10	5
All faculties	5,890	77	8	35	19	12	13
Men							
Humanities	1,120	72	2	22	13	9	7
Social science	1,520	72	2	24	22	13	13
Medicine	1,640	64	14	19	12	14	38
Math./natural science	1,090	87	19	52	34	9	7
Technology	2,720	84	1	62	15	7	11
Technology/nat.science	490	90	8	65	28	12	5
All faculties	9,610	77	6	41	19	11	15

Foreign postgraduate students

The number of those with foreign citizenship pursuing Swedish postgraduate studies was approximately 2,500 in the autumn term of 1993 (including those with unknown citizenship and stateless persons). The group constitutes about 17 per cent of the 15,300 active postgraduate students that term. Five years earlier, in the autumn term of 1988, the corresponding proportion was 14 per cent.

Foreign citizenship among postgraduate students (five largest countries, autumn 1993).

Country	Autumn term 1988		Autumn term 1988	
	Tot	%Wo.	Tot	%Wo
People's Rep. of China	220	25	480	32
Finland	170	52	170	64
USA	130	42	140	42
Iceland	120	28	140	29
Norway	86	31	140	35
Total foreign¹⁾	1,800	29	2,560	32
Total	12,900	32	15,300	36

¹⁾ The number includes 9 persons with unknown citizenship or stateless in 1988 and 102 in 1993.

The proportion of women in the group with foreign citizenship in the autumn term of 1993 was 32 per cent, four per cent lower than for the whole group. The proportion of women among foreign postgraduate students has however grown since the autumn term of 1988 when it was 29 per cent. The proportion of women among Finnish postgraduate students is large, 64 per cent. This also applies to basic higher education.

Chinese men the largest group

Chinese men constituted by far the largest group of active postgraduate students with foreign citizenship in the autumn of 1993, 480 individuals.

Among those residing in Sweden with Chinese citizenship in the 18-44 age group, as many as 31 per cent of men and 14 per cent of women were pursuing postgraduate studies.

Most foreign postgraduate students at the faculty of medicine

In the autumn term of 1993, the largest group of postgraduate students with foreign citizenship could be found at the faculty of medicine, totalling just over 700. 25 per cent of men and 18 per cent of women at this faculty had foreign backgrounds.

The faculty of engineering and natural science (only in Uppsala) and the faculty of mathematics and natural science also had a large proportion of foreign citizens.

Of the major faculties for which data is given in the table below, the faculty of social science has the smallest proportion of foreign postgraduates. At certain of the smaller faculties (philosophy, law and the postgraduate department of the Stockholm School of Economics) the proportion of foreign postgraduates is less than 10 per cent.

Postgraduates with foreign citizenship by faculty, autumn 1993¹⁾. Number and proportion for both sexes.

Fakulty	Women %		Men %	
Humanities	140	15	130	13
Social science	120	10	220	14
Medicine	240	18	480	25
Math./nat. science	98	18	210	19
Technology	110	15	380	14
Technology/nat.science	37	21	130	27
Total foreign citizens	830	15	1,730	18

¹⁾ Only faculties with at least 100 foreign postgraduates are given. The number includes those with unknown citizenship or stateless.

Postgraduate degrees

Number of degrees taken has almost doubled over the past 10 years

The total number of postgraduate degrees taken during the period between 1986/87 and 1995/96 increased from just under 1,300 to just over 2,400. The increase was greatest for licentiate degrees, which almost tripled to 830 in the academic year of 1995/96. The number of doctorates increased by almost 70 per cent and totalled just over 1,600 in the academic year of 1995/96. During the period under consideration the number with both a licentiate and a doctorate also increased.

Just over 30 per cent of women among those taking degrees

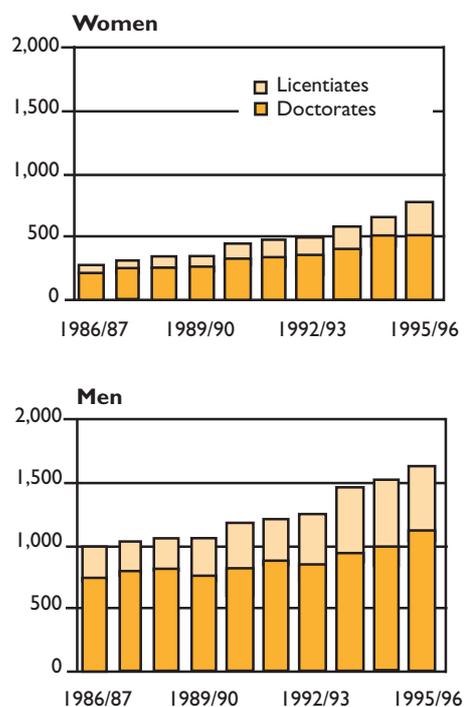
The proportion of women among those taking degrees increased from 22 to 31 per cent. The proportion of women among those taking doctorates was 32 per cent and among licentiates it was 30 per cent in 1995/96.

The faculty of Technology has the largest number of licentiates

Licentiate degrees were taken at almost all faculties in 1995/96. Just over half of the licentiates were from the faculty of engineering, followed by the faculty of social science.

The preponderance of the faculty of engineering among licentiates entails a correspondingly low proportion of women. At engineering faculties they only constitute approximately a fifth of postgraduate students. The proportion of women among licentiates grew from 24 to 30 per cent

Number of doctorates and licentiates.



during the period under consideration, however.

Men have a slightly shorter period of study than women

The nominal study period for a doctorate is 4 years of full-time studies, and for a licentiate it is 2-2.5 years.

The actual gross study period—the number of terms from the commencement of postgraduate training to taking a degree—amounted to 14 terms for doctorates and 8 terms for licentiates in the academic year of 1995/96. For both types of degree men have a study period that is shorter than that of women by a term or so.

Number of doctorates and licentiates. Total and proportion of women.

	1986/87		1989/90		1992/93		1995/96	
	No.	% w.						
Doctorates	960	21	1,030	27	1,220	30	1,600	32
Licentiates	330	24	420	23	550	25	830	30
Total	1,280	22	1,450	26	1,770	28	2,430	31

Most doctorates at the faculty of medicine

The largest number of doctorates are taken at the faculty of medicine. In 1995/96 they amounted to just over 480, 30 per cent of all doctorates. Of those with a degree from a faculty of medicine, two thirds have a clinical orientation and one third have a pre-clinical orientation.

Among both women and men the commonest degree is Doctor of Medical Science. For men, however, the number of degrees in engineering was almost as great.

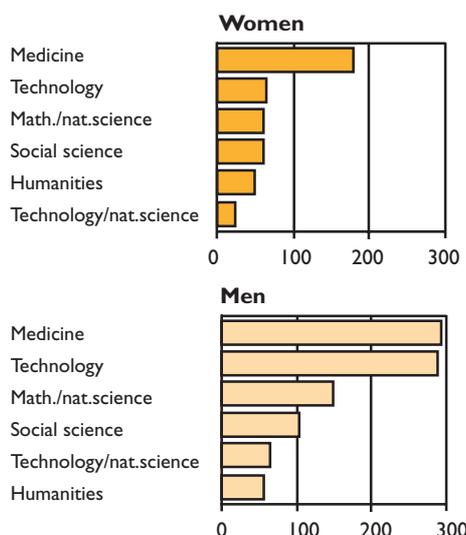
Largest increase in number of doctorates at the faculty of technology

In terms of the number of degrees taken, the faculty of engineering showed the greatest increase between 1986/87 and 1995/96, from 160 to just over 360. The proportion of women increased from 6 to 18 per cent during the period under consideration. The proportion of women was unusually small in 1986/87.

The proportion of women increased in most faculties

Of the six biggest faculties (see table), the largest increase in the number of female PhDs occurred at the faculty of medicine. The increase was from 23 to 38 per cent between 1986/87 and 1995/96. During the same period the number of female PhDs increased by around 10 percentage points at

Number of doctorates at major faculties 1995/96.



the faculty of mathematics and natural science and at the faculty of engineering and natural science.

Of the major faculties, the only ones not to show a clear trend towards a growing proportion of women among new degree holders were the faculty of humanities and the faculty of social science. The proportion of women at these faculties was already relatively high in 1986/87, 44 and 34 per cent respectively.

In half of all the faculty areas, fewer than 30 doctorates were taken per year. In these faculties, too, the trend has been towards a growing proportion of women.

Doctorates at major faculties. Total and proportion of women.

Faculty	1986/87		1989/90		1992/93		1995/96	
	No.	% w.	No.	% w.	No.	% w.	No.	% w.
Humanities	84	44	81	38	100	49	110	42
Social science	80	34	93	29	130	46	120	37
Medicine	320	23	340	30	380	29	480	38
Mathematics/natural science	130	17	160	25	150	31	210	28
Technology	160	6	160	14	260	18	360	18
Technology/natural science	53	13	74	20	67	19	95	23
All faculties	960	21	1,030	27	1,220	30	1,600	32

The shortage of competence is a myth

Interview with Agneta Hansson, head of the Centre for the Development of Working Life at the University College of Halmstad

If you ask Agneta Hansson at the University College of Halmstad what has been done at her place of work to promote gender equality and equal opportunities, you will get a very comprehensive answer. Both in words and in writing. An impressive flow of projects for the benefit of gender equality has its source here. The network for female entrepreneurs in Halland, projects to strengthen the position of women in the European labour market, conferences the exchange of ideas among female inventors and inter-European collaborative efforts between institutions of higher education and companies for the benefit and enjoyment of female students. Democracy, broad participation and dialogue are key words in the work of the Centre for the Development of Working Life (Centrum för Arbetslivsutveckling — CAU) of which Agneta Hansson is the head. Almost 30 employees from a number of different disciplines conduct research into working life, and they make constant use of the gender perspective. As a unit, the group constitutes a cross-disciplinary knowledge base in which both engineering and the humanities are represented.

“The atmosphere here is saturated with the idea of gender equality,” affirms Agneta Hansson.

Last year the CAU was nominated for the Government’s Equal Opportunity Prize by the Vice-Chancellor’s office. And was proud to receive the 250,000 kronor in prize money handed over by Minister of Education and Science Carl Tham. In return, Carl Tham received a copy of the book that had been very quickly compiled by workers at the CAU and others, *European Handbook of Women Experts in Science, Engineering and Technology*.

“It was being claimed in various quarters in the EU that the reason there were so few women in top posts in Europe was that there was a shortage of competent applicants.”

The book provides crushing evidence to the contrary. It catalogues 1,400 women who are able and willing to stand for posts in the various committees of the EU. Their competence profiles speak volumes, and are described by one of the words in the book’s title, *Experts*. In a mere two months, 72 Swedish experts were unearthed. Work on the book was organized by way of WITEC, Women in technology, which is a network of and for women in the business community and education. The organization has members throughout Europe. In Sweden WITEC has its centre in Halmstad and the Centre for the Development of Working Life. Agneta Hansson is the Swedish coordinator and a member of the international executive committee.

“The experts book accompanied Carl Tham to the conference of ministers in Brussels. And WITEC is now working on an update of the contents and the development of a supplementary database.”

WITEC is not the only network for women to have its home at the CAU. An association of female entrepreneurs is working for interchange of experience and social contact at the regional level. There are national links between female inventors as the result of a conference for the exchange of ideas initiated by the CAU.

The Centre has grown rapidly. Its work is oriented towards the outside world, with CAU researchers working with companies and organizations to gather knowledge about working life and to encourage desirable changes in it.

“In what we do, the focus is on promoting women as entrepreneurs and inventors. Plus the search for better communication between the sexes.”

Watching the University College of Halmstad and the enterprising staff of the CAU at work, it is easy to get the impression that working for gender equality is a simple matter. That it is more a question of commitment as a basis of change rather than reform by compulsion. But Agneta Hansson has been working in education for twenty years, ten of them in the world of research.

“Gender equality work has been there all the time. And by no means everybody is happy with it,”
Agneta Hansson remarks drily.

As tangible proof of hard work done and goals achieved, however, a quarter of a million kronor of equal opportunity money has been warming the CAU account for over a year now.

“We would like to invest the money in gender equality, of course. It represents an extra opportunity for us to travel so we can gather information and make contacts.”

In this way Agneta Hansson hopes to create a web of links, all of which at their various levels — regional, national and international — will be able to work for a world with a better gender balance.

By Malena Bång

Teaching and research staff

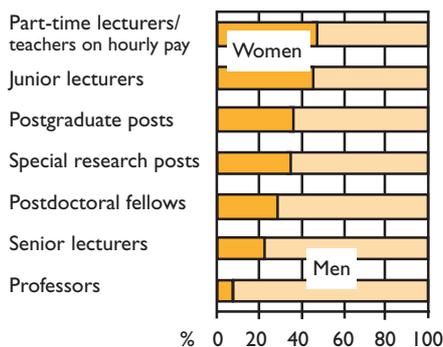
State-salaried employees at institutions of higher education

In the autumn of 1996, the number of state-salaried teaching and research staff at institutions of higher education was approximately 31,500. This category constitutes some 60 per cent of all staff at these institutions. In terms of full-time staff the number corresponds to approximately 24,300 people. By comparison with the figures for 1987, the number of teaching and research staff has increased by about 7,700.

Women make up just over a third of teaching and research staff

In 1996, women made up just over a third

Teaching and research staff in 1996. Proportion of women and men.



of the group of teaching and research staff. The proportion of women has increased by four percentage points since 1987. Among all state-salaried staff at institutions of higher education in 1996, almost half were women. This total also includes administrative and cleaning staff, categories with a large proportion of women.

Large differences in the distribution of women and men between employment categories

In 1996, the proportion of women varied from just under nine per cent of professors to 48 per cent of part-time lecturers/teachers on hourly pay. The proportion of women among junior lecturers was about the same, 48 per cent. In other categories the proportion of women is not more than a third.

The proportion of women increased in most employment categories. Among professors the increase was just under four percentage points, while the increase in the category which expanded most, postgraduate training posts, amounts to 12 percentage points.

Number of state-salaried teaching and research staff at institutions of higher education. Number and proportion of women.

Category	1987 (Mar)		1990 (Sep)		1993 (Oct)		1996 (Oct)	
	% w.	Nr.	% w.	Nr.	% w.	Nr.	% w.	% kv
Professors	1,740	5	1,990	6	2,090	7	2,260	9
Senior lecturers	3,770	17	4,200	18	4,980	21	5,630	23
Postdoctoral fellows	580	23	910	22	1,120	24	1,180	29
Postgraduate posts	2,560	25	3,670	30	5,690	33	6,860	37
Special research posts	4,010	31	3,390	34	1,870	32	2,390	35
Junior lecturers	4,870	43	4,840	42	5,910	42	6,470	46
Part-time lecturers/teachers on hourly pay ¹⁾	6,450	45	4,400	46	4,940	46	6,740	48
All categories²⁾	23,990	32	23,400	33	26,600	32	31,530	36

¹⁾ This category also includes short-term temporary staff and envigilators. The number underestimates the actual number.

²⁾ During the period under consideration a number of health science colleges have been established.

More women — a goal in the appointment of new professors

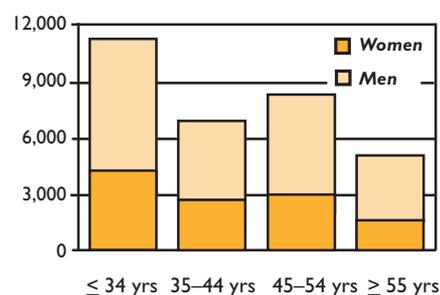
In a Government Bill (prop. 1996/97:141), new principles are proposed as recruiting goals for institutions of higher education with a view to increasing the proportion of women among newly appointed professors.

Age distribution

16 per cent over 54 years old

The age distribution among state-salaried teaching and research staff in the autumn of 1996 shows that just over a third are under 35 years old, approximately half are between 35 and 54 years old and 16 per cent are 55 years old or older.

Age distribution among teaching and research staff in 1996.



In the under 35 age group the proportion of women is 37 per cent. In the older age groups the proportion of women is somewhat lower (see table).

Age distribution among state-salaried teaching and research staff in 1996.

Distribution by age group. Total and proportion of women.

Category	≤ 34 years		35-44 years		45-54 years		≥ 55 years	
	Nr.	% w.	Nr.	% w.	Nr.	% w.	Nr.	% w.
Professors	5	—	250	7	1,050	10	970	8
Senior lecturers	250	19	1,380	21	2,560	24	1,440	24
Postdoctoral fellows	320	24	670	28	190	42	10	64
Postgraduate posts	5,310	34	1,170	44	330	58	40	79
Special research posts	680	42	890	32	610	35	220	29
Junior lecturers	1,200	39	1,660	45	2,440	48	1,170	50
Part-time lecturers/teachers on hourly pay	3,370	44	1,170	50	1,130	53	1,080	53
All categories	11,120	37	7,180	36	8,310	36	4,920	34

43 per cent of professors over 54 years old

Most professors, 1,050, are in the 45-54 age group. The proportion of female professors is also largest in this age group, ten per cent. Almost as many professors, 970, are in the 55 and over age group. The proportion of female professors in this group, as in the 35-44 age group, is only 7-8 per cent.

The comparatively low proportion of women in the younger age group is partly due to the fact that women are older than men when they obtain their qualifications, and partly due to the fact that almost half of the youngest professors are to be found in the male-dominated subject areas of engineering and natural science.

25 per cent of senior lecturers over 54 years old

As with professors, the largest group of senior lecturers, 2,600, is found in the 45-54 age group. The proportion of women varies between 19 and 24 per cent in the different age groups.

Postgraduate posts for younger groups

In the youngest group, under 35 years old, those employed in postgraduate posts form by far the largest group, 5,300. In other age groups this category is considerably smaller. The proportion of women is much larger in the older age groups than in the younger ones.

Areas of activity

The distribution of state-salaried teaching and research staff among major areas of activity at institutions of higher education with permanent research resources in the autumn of 1996 is shown on this page. In most cases, these areas correspond to the faculty divisions at universities. There are no figures available for distribution by areas of activity for small and medium-sized institutions of higher education.

Engineering is the largest area of activity and the one with the lowest proportion of women

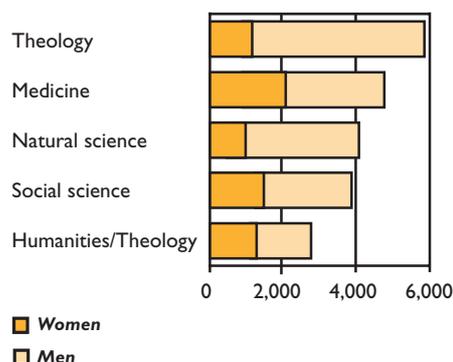
The greatest number of teaching and research staff is found in the engineering area, with almost 5,900 employees, followed by the areas of medicine and natural science with 4,800 and 4,100 employees respectively.

In 1996, just under a fifth of employees in the engineering area were women. The proportion is almost the same as for female postgraduate students. Among professors the proportion of women is four per cent and among senior lecturers it is nine per cent.

Almost half the staff are women in the area of humanities and theology

One of the major areas which has had a large proportion of female postgraduates for many

Number of teaching and research staff in the five largest areas of activity, 1996.



years, humanities and theology, also has the largest proportion of women among staff, 46 per cent. The number of women among professors is 18 per cent and among senior lecturers it is 38 per cent. This may be compared with a general average of 9 and 23 per cent respectively for government-funded institutions of higher education.

Just over a third are women in medicine and natural science

The proportion of female postgraduates in medicine and social science has increased over the past ten year period and constituted just over 40 per cent of active postgraduates in 1996. The proportions of women among staff in the areas of medicine and social science were 45 and 37 per cent respectively.

Number of state-salaried teaching and research staff in the five largest areas of activity in 1996. Total and proportion of women.

Category	Hum./Theol.		Social sc.		Medicine		Natural sc.		Theology	
	No.	% w.								
Professors	200	18	270	11	530	6	290	5	540	4
Senior lecturers	660	38	1,000	27	600	29	960	16	930	9
Postdoctoral fellows	150	46	110	31	290	40	250	23	250	13
Postgraduate posts	540	50	720	42	940	51	1,590	34	2,080	23
Special research posts	180	43	420	42	590	43	290	31	300	17
Junior lecturers	400	52	770	43	510	63	320	30	640	23
Part-time lecturers/ teachers on hourly pay	600	56	630	49	1,240	57	420	36	1,140	28
All categories	2,740	46	3,920	37	4,790	45	4,120	26	5,860	19

Study debts and salaries

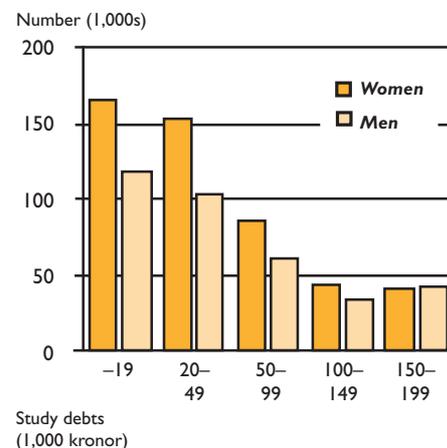
Finally, to supplement the previous sections, this section will describe two further aspects of higher education in a very summary fashion.

Study debts

More women than men have study debts

On 1 January 1996, the number of women with (public sector) study debts was

Number of people with study debts on 1 January 1996.



642,000, while the number of men was 472,000. A small proportion of those with study debts obtained study loans for training outside the system of higher education.

Approximately half of all those with study debts had a debt of at least 50,000 kronor, and 14 per cent of women and 16 per cent of men had debts of at least 150,000 kronor.

In the academic year of 1995/96 some 68 per cent of those studying in higher education (including postgraduate training) made use of government-funded study assistance. Fifty per cent took out study loans. The proportion of women among those with loans was 55 per cent, approximately the same as the proportion of women in basic higher education that year.

To a greater extent than men, women need supplementary post-upper-secondary training to obtain professional qualifications. To a markedly greater extent than men, women then choose training programmes oriented towards care or teaching — programmes which generally speaking lead to professions which are not particularly well-paid. This entails a relatively greater debt burden for women than for men.

Fewer men than women pursue studies in higher education, and a considerably larger proportion of men than women choose orientations in higher education that lead to better-paid jobs (see next page).

Study assistance in brief

Study assistance is approved for studies in higher education. Those aged 20 or over who study in other educational sectors, such as the upper secondary system or local authority administered adult education, are also eligible to receive study assistance. In accordance with the study assistance system of 1989, study assistance is approved for a total of not more than 12 terms and as a rule only for individuals under the age of 46. Study assistance consists of a combined grant and loan. It is possible to apply for the grant alone.

Study assistance is calculated in relation to the basic sum according to the National Insurance Act. For the spring term of 1996 (4.5 months) the maximum amount of study assistance was 31,765 kronor, of which the loan portion amounted to 22,936 kronor (72 per cent).

Salaries

The final section of this report provides an overview of average monthly salaries for women and men in 1995 calculated as full-time equivalents. The figures shown give a rough idea of the differences between the salaries of women and men (a more exact definition is given on page 73). A division into levels of qualification, such as is recommended for the study of differences between women's and men's salaries, would probably reduce the differences somewhat.

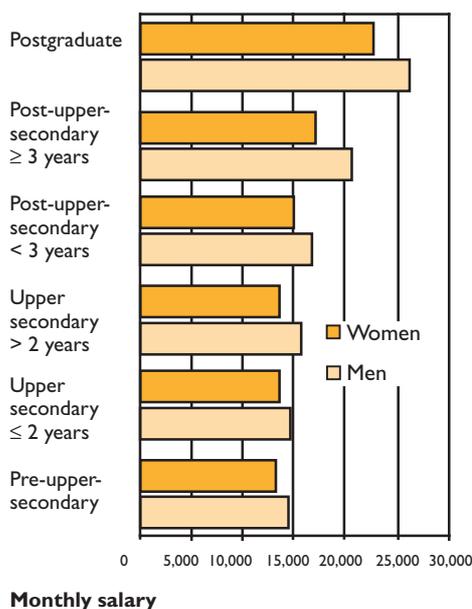
Regardless of level of education — men have higher salaries

The diagram and table on this page contain salary data for women and men at all levels of education, from nine-year compulsory school up to postgraduate level. At every level, men have higher average salaries than women.

Men with upper secondary qualifications have higher pay than women with (short) post-upper-secondary qualifications

The diagram also shows that the higher the level of education, the higher the salary. This applies as long as women and men are studied separately. If comparisons are drawn between the sexes, it emerges that men with upper secondary qualifications have higher salaries than women with short post-upper-secondary training. Corresponding differences — with higher salaries for men — will also be found between women with

Average monthly salary in 1995 (full-time equivalent) between the ages of 18 and 64.



upper secondary qualifications and men with only compulsory school qualifications.

The greatest differences are found among those with long post-upper-secondary training

Women at the post-upper-secondary level, with at least three years training, had only 83 per cent of the salary of men with the same level of education. The smallest differences between the sexes were found among those with no upper secondary qualifications and among those with short upper secondary training.

Average monthly salary (full-time equivalent) in 1995 between the ages of 18 and 64. Distribution by level of education and gender.

Level of education	Monthly salary		Women's pay in % of men's pay Difference	Women's pay in % of men's pay		
	Women	Men		18-64	25-39	40-64
Pre-upper-secondary	13,110	14,500	-1,390	90	89	89
Upper secondary ≤ 2 years	13,540	14,850	-1,310	91	91	89
Upper secondary > 2 years	13,470	15,750	-2,280	86	90	82
Post-upper-secondary < 3 years	14,920	17,100	-2,180	87	88	82
Post-upper-secondary ≥ 3 years	17,370	20,820	-3,440	83	84	82
Postgraduate	22,930	26,500	-3,570	87	92	84

Women with post-upper-secondary training have approximately 85 per cent of the salary of men

The difference in salary between women and men with post-upper-secondary training is greater in the 40-65 age group than in the 25-39 age group. In the younger group, women had about 86 per cent of the salary of men, in the older group about 82 per cent. The difference was smallest for those under the age of 25, but few people have completed post-upper-secondary training at that age.

Long education programmes often lead to high salaries

Generally speaking, the longest programmes of training lead to the highest salaries (see table below). This group includes those with postgraduate training (medicine) and doctors, graduate engineers and lawyers with professional training, all with monthly salaries exceeding 25,000 kronor in 1995. Some medium-duration programmes of training such as economics and business studies also belong in this category. Common to all these programmes of training is that they have a low proportion of women.

Great differences in salary among economics and business studies graduates and lawyers

Great differences between the salaries of women and men are found among economics and business studies graduates and lawyers. In these categories women have only three quarters of the salary of men.

Lower salaries for nurses with supplementary training than for engineers with upper secondary qualifications.

Most post-upper-secondary training programmes in care and teaching lead to jobs with relatively low levels of pay. Traditionally these categories are completely dominated by women in numerical terms, often with a proportion of over 90 per cent.

Even nurses with supplementary training have salaries that are one or two thousand kronor lower than the salary of engineers with upper secondary qualifications (four years). The former programme of training usually gives rise to study debts, but not the latter.

Average monthly salary (full-time equivalent) in the age group 18-64, 1995. Distribution by certain post-upper-secondary programmes of training.

Programme of training	Salary ¹⁾	Women's pay in % of men's	Proportion of women	Average age
Postgraduate (medicine)	34,800	84	23	49
Medicine	31,900	90	41	44
Graduate engineering (chemical engineering)	26,200	78	33	40
Graduate engineering (technical physics, electrical engineering, computer techn.)	26,000	86	9	38
Law	25,300	77	37	43
Economics and business admin.	25,200	73	40	38
Upper secondary teaching	19,600	94	53	49
4-year upper sec. engin. line	18,000	82	11	34
Intermediate school teaching	17,800	93	64	47
Social work	17,200	88	79	44
Nursing (with supplementary training)	16,000	95	91	42
Lab. assistant	15,100	97	93	43
Pre-school teacher	14,300	97	95	40
Recreation instruction	14,200	97	76	39
Compulsory school teacher (qual. 1991/92 or later)	14,000	98	82	30

¹⁾ Salary data from the year-book of salary statistics (*Lönestatistisk årsbok*), 1995.

From observation to promotion

Interview with MP Margitta Edgren

For a girl, she's really quite capable. This was the title of a report on gender equality work in higher education commissioned by the Ministry of Education and Science in 1992 and prepared by Egon Hemlin at the National Swedish Board of Universities and Colleges. The report showed that very little had actually been done in relation to gender equality or equal opportunity in higher education. For this reason the then Minister of Education and Science, Per Unckel, set up a work group for gender equality and equal opportunity in higher education and research, called JÄST*) (yeast, or ferment). The group comprised twelve people from both the higher education sector and the Ministry of Education and Science.

After just over five year's of activity, the work group was dissolved in June 1997. *Jämställdhetsjournalen* (The Equal Opportunity Journal) asked Margitta Edgren, a Liberal representative in the Education Committee of the Swedish Parliament and chair of the JÄST group, to summarize the work of the group.

"The work has been both meaningful and great fun," says Margitta Edgren. "Nowadays, thanks to us, equal opportunity is viewed not merely as a question of justice but as a question of quality within higher education. A precondition for high quality is naturally the presence of both men and women. Men and women think in different ways, and this allows something new to emerge."

The task of the JÄST group was to monitor the ways in which equal opportunity efforts were conducted in higher education in relation to such matters as recruitment to programmes of education, research and teaching posts seen from an equal opportunity perspective. They scrutinized the national university aptitude test and monitored the work of the Council for the Renewal of Undergraduate Education, and studied international experience in the equal opportunity field.

On the basis of the data they collected, the group formulated comments and proposals on ways in which gender equality between women and men might be improved in higher education. The work group also assessed applications for equal opportunity grants. Twenty-eight million kronor was distributed to various equal opportunity projects at institutions of higher education in Sweden.

At the urging of the work group, equal opportunity has also been embodied in the Higher Education Act: *equal opportunities for women and men shall always be considered in higher education activities.* What's more, the word "considered" will soon be replaced by "promoted".

"And it is in the same section that declares that higher education shall strive for internationalization," says Margitta Edgren with pride.

*) JÄST is an abbreviation of the Swedish word *jämställdhet*, which means equality of opportunity.

Although they were selected on the basis of their everyday activities, the members of the JÄST group were not bound to the views of any institution, neither the National Agency for Higher Education nor the Ministry of Education and Science.

“We were free riders, and that was a tremendous asset, both for us and for those we came into contact with. I myself, for instance, paid no attention to the Liberals’ official views on these matters.”

The winding up of JÄST does not signify that gender equality has been achieved.

“No, but we ourselves asked to be relieved of the assignment. Five and a half years is the limit for the length of time you should be involved with a group of this nature. Now the National Agency for Higher Education will have to take full responsibility for carrying on the work. If it should prove necessary again in a few years’ time, then a new group will have to be set up.”

When discussing efforts to achieve gender equality most of us view the question from a women’s perspective. It is usually a question of getting girls interested in traditionally male subjects, of improving women’s salaries, of appointing more women to leading positions ... but gender equality efforts are also needed in the other direction.

Before Margitta Edgren became a Member of Parliament she was a nurse in Lund, her home city, and she retains contact with the health service as a member of the Board of Governors of the Lund/Helsingborg College for Health Sciences.

“They were completely nonplussed when I said that we had to work for gender equality there, too. But women too have to realize that quality will improve if both sexes are found in a profession.”

In relation to the direct links between professions with low pay, low status and a high proportion of women, Margitta Edgren thinks it is difficult to say which is the chicken and which the egg. But salaries must be raised to attract men to certain occupations, such as teaching, for instance, which is becoming more and more of a female profession. In recent years many male teachers have left the school system for other workplaces.

“I don’t know how to solve the problem, but teaching must probably be upgraded in terms of salary and consequently status. The content of the work, too, should probably be modified in some way so that it becomes more attractive to men. We might even need to change the whole school system,” reflects Margitta Edgren.

“But you can compare the amount of money that has been spent on getting women to go into engineering, for instance, with what has been invested in attracting men to teaching... This gives signals about which professions are considered important and which aren’t.

“The JÄST group didn’t look at salaries in higher education. Men and women at the same level have the same salaries there,” says Margitta Edgren. *“On the other hand, most professors are men, while the junior lecturers are women, and salaries are higher for engineers than they are for people in the humanities.”*

The national university aptitude test has had a tendency to operate to the disadvantage of women. For this reason, the JÄST group contacted the people behind the test.

“To our joy, we found they had a high degree of awareness of the problem. They are constantly trying to take it into consideration, partly in the selection of texts for the reading comprehension test, partly in the formulation of specific questions. If a maths question is framed using an example from knitting, for instance, the women will be able to solve it, but the men won’t.”

Nevertheless, the tendency for the national university aptitude test to suit men better than women still remains.

“It could well be due to a lack of imagination. Even if they know that they must ask different questions, it is difficult to start thinking along those lines.”

On the question of female researchers and leaders in higher education, many people react by saying “there aren’t any”. For this reason the JÄST group prepared a catalogue of all women in higher education with PhDs and/or leading positions.

“Are there that many?” people usually ask when they see the list.

Margitta Edgren is satisfied with what JÄST accomplished during its five years’ of activities. She attributes the fact that the members of the group found the energy to urge on its work over and above their normal jobs to its stimulating character and a sense of achievement.

“We could have done more in relation to international contacts, though. And we should have visited all the institutions of higher education in Sweden. We missed a few.”

“Where we did go, we felt we were well received, and that our work has created a certain degree of respect.”

But Margitta Edgren sometimes feels that gender equality work progresses too slowly. She thinks that the path from insight to action is far too long.

“Lip service isn’t the same as action. But I don’t know what I could possibly do about that. For instance, I was very disappointed when we visited the brand new university college in Malmö, whose terms of reference even state explicitly that it shall strive for equal opportunity, and we found no such awareness. That was depressing.”

She sees this as proof that equal opportunity work must use the approach of the JÄST group — support, investigate, check and follow up.

“I don’t believe in mainstreaming. It is not built into us to act to further equal opportunity — watchdogs are needed.”

By Ingela Hofsten

Definitions and concepts

Post-upper-secondary education in the population

Data relating to level and orientation of education are taken from the records of *Befolkningens utbildning* (the education of the population). The records contain data on completed programmes of education. Data from before 1990 lack figures relating to single subject courses, for instance, and people with foreign training. After updating with data from the census of 1990, these shortcomings have to a great extent been remedied. Programmes of education are classified in accordance with *Svensk utbildningsnomenklatur*, SUN (Swedish educational terminology).

Orientation of education according to SUN:

- 1) Training for artistic, theological and liberal professions
- 2) Teaching and educational activities
- 3) Training for administration and commerce, and training in economics and business administration, and social and behavioural sciences
- 4) Training for trade and industry, and training in engineering and the natural sciences
- 5) Training for transport and communications
- 6) Training for care and health science professions
- 7) Training for agriculture, horticulture, forestry and fishing
- 8) Training for service professions and for civil surveillance and military service
- 9) No training and training that cannot be placed in a specific major category

Level of education:

- (1-4 pre-upper-secondary and upper secondary schooling, 9 unspecified level)
- 5) post-upper-secondary training of less than 3 years
 - 6) post-upper-secondary training of 3 years or more
 - 7) postgraduate training

Upper secondary

In 1971, an upper secondary system was introduced consisting of lines and special courses. In the academic year of 1987/88, a trial involving three-year vocationally oriented lines was initiated. Previously, vocational lines had taken two years. In

the spring of 1991 a parliamentary decision was taken to reform the upper secondary system. Among other things, the reform involved phasing out the lines and special courses between 1992 and 1995 and replacing them with 16 national programmes and specially designed individual programmes. The data in the present report are mainly based on the old line-based upper secondary system.

Basic higher education

Basic higher education in the period between 1977/78 and 1992/93 consisted of lines and individual/single subject courses. The lines were grouped into five educational sectors: Engineering; Administrative, Economic/Business and Social Professions; Health and Care; Teaching; and Culture and Information.

In conjunction with the reform of higher education in 1993, the nationally determined general lines were abolished and a new Degree Ordinance was introduced. Among other things, the reform involved central government deciding certain objectives and guidelines but otherwise leaving decisions on the programmes of education to be offered in basic higher education to the institutions of higher education themselves.

After 1 July 1993, all basic higher education is provided in the form of courses. These may be combined to form programmes of education. Students themselves may also combine various courses into a degree programme. The present report uses the following division of subject areas at the most aggregated level:

- Humanities and Theology
- Law and Social Science
- Natural science
- Technology
- Medicine
- Care and Health Science
- Fine Arts and Practical and Artistic Training
- Other subjects

New students in higher education: new students are defined as those registered for the first time in basic higher education in Sweden.

Registered students: students are defined as registered if they are registered for the first time for a course or if they are registered as continuing with courses taking two terms. Those who are re-registered or registered for examinations are not included. Before 1993/94 those who had a re-registration in the statistical material were also included.

Level of achievement: full-year achievement per full-year student. A level of achievement of 100 per cent means that all students studying full-time take 40 credits in one academic year.

Degrees: data confirming degree certificates taken covering all the components in a line of training. Those who have started on a line of training have the right to take a degree in accordance with the old study regulations until the end of 1999. A new Degree Ordinance came into force in 1993/94. Degrees are classified into two major groups: **General degrees** (Certificate of Higher Education, BA and Master's degrees) and **Professional degrees** (of which there are some 50, for which specific national objectives are laid down in the Degree Ordinance).

The report makes a distinction between degrees comprising at least 120 credits and those of less than 120 credits. 20 credits corresponds to one term's full-time studies. Degree data are not calculated net. During a single academic year (budget year), one or two per cent of those taking degrees will have taken more than one degree.

Data relating to the proportion of those taking degrees in basic higher education between 1987/88 and 1991/92 and starting postgraduate training not later than 1995/96 refer to Swedish postgraduate training.

Postgraduate training

New postgraduates: students who start postgraduate training for the first time or radically change the orientation of their studies.

Active postgraduates: registered postgraduates with an activity level of at least 10 per cent. An activity level of 100 per cent is considered to correspond to a work input averaging 40 hours a week.

Research degree: degree certificates taken for a licentiate or doctorate.

Teaching and research staff

The data were originally taken from the Swedish salaries database SLÖR. This system contains only data relating to public sector employees. As a result there are no data for the staff of colleges of health science or for other institutions of higher education not funded by central government. The reported data also contain other imperfections. Some institutions of higher education do not provide data on the number of part-time staff paid by the hour.

The data in this report refer to the situation in March 1987, September 1990, October 1993 and October 1996. The data have not been converted to full-time equivalents.

Miscellaneous

Monthly salary — average: to obtain comparability, salaries for part-time positions have been converted to full-time equivalents. For all sectors of the labour market, the monthly salary includes data on:

- Basic salary including basic salary supplements
- Result-based payments, bonus payments and commission, etc
- Pay supplements for shift work, unsocial working hours, etc
- Payments for stand-by and emergency service

Private sector figures also include benefits in kind and other cash remuneration for salaried employees and compensation for holiday work for manual workers.

Data on salaries are taken from the Statistics Sweden publication *Lönestatistik årsbok 1995* (Year-book of salary statistics 1995), which should also be referred to for further information regarding population, time of measurement/period of measurement, method of inquiry and data concerning the reliability of the inquiry, etc.

Rounding principles: In the tables numbers larger than 1,000 have generally been rounded off to the nearest 100, while numbers between 100 and 999 have been rounded off to the nearest 10.

Net calculations: students are only counted once at each level of summation. In the account given of postgraduate training, only the number of new postgraduates has been calculated net. Basic degrees are not calculated net.

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Högskoleverket Reports (Högskoleverkets rapportserie)

Granskning och bedömning av kvalitetsarbete vid universitet och högskolor

Bilagor:

- Bilaga 1: Vägledning för lärosäten vid bedömning av kvalitetsarbete
- Bilaga 2: Handledning för bedömare av kvalitetsarbete vid universitet och högskolor

Högskoleverkets rapportserie 1995:1 R

Grundskollärautbildningen 1995

Högskoleverkets rapportserie 1996:1 R

Examensrättsprövning – Utbildning i biodynamisk odling

Högskoleverkets rapportserie 1996:2 R

Tillsynsrapport – Avgiftsfri utbildning

Högskoleverkets rapportserie 1996:3 R

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Kvalitetsarbete vid universitet och högskola

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Vårdutbildningar i högskolan – En utvärdering

Högskoleverkets rapportserie 1996:7 R

Årsrapport för universitet och högskolor 1994/95

Högskoleverkets rapportserie 1996:8 R

Forskarutbildningen inom det språkvetenskapliga området

– En utvärdering

Högskoleverkets rapportserie 1996:9 R

The National Quality Audit of Higher Education in Sweden

Högskoleverkets rapportserie 1996:10 R

Avgiftsbelagd utbildning i privat regi – En utredning

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Kriterier för benämningen universitet – En utredning

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Kvinnor och män i högskolan. Från gymnasium till forskarutbildning

Högskoleverkets rapportserie 1996:13 R

Swedish Universities & University Colleges 1994/95 – Short Version of Annual Report

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Högskoleverkets rapportserie 1996:15 R

Granskning och bedömning av kvalitetsarbetet vid Högskolan i Borås

Högskoleverkets rapportserie 1996:16 R

Granskning och bedömning av kvalitetsarbetet vid Uppsala universitet

Högskoleverkets rapportserie 1996:17 R

Examensrättsprövning – Uppföljning av teologisk utbildning

Högskoleverkets rapportserie 1996:18 R

Granskning och bedömning av kvalitetsarbetet vid Högskolan i Jönköping

Högskoleverkets rapportserie 1996:19 R

Granskning och bedömning av kvalitetsarbetet vid Högskolan i Karlstad

Högskoleverkets rapportserie 1996:20 R

Granskning och bedömning av kvalitetsarbetet vid Lärarhögskolan i Stockholm

Högskoleverkets rapportserie 1996:21 R

Högskoleprovet – Genom elva forskares ögon

Högskoleverkets rapportserie 1996:22 R

Högskola på Gotland

Högskoleverkets rapportserie 1996:23 R

Rätt att inrätta professurer – Högskoleverkets prövning av Högskolan i Kalmar, Karlstad, Växjö, Örebro samt Mitthögskolan och Mälardalens högskola

Högskoleverkets rapportserie 1996:24 R

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– Kortversion

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Förslag till meritvärdering vid urval på betyg – Högskoleverkets förslag till meritvärdering av nya och gamla gymnasiebetyg m.m.

Högskoleverkets rapportserie 1996:26 R

Redovisning vid universitet och högskolor – Rapport till regeringen

Högskoleverkets rapportserie 1996:27 R

Quality Audit of Uppsala University

Högskoleverkets rapportserie 1996:28 R

Tillsynsrapport – Förfarande med inaktiva doktorander

Högskoleverkets rapportserie 1996:29 R

Examensrättsprövning – Prövning av medieutbildningen vid

Mediehögskolan i Uppsala

Högskoleverkets rapportserie 1996:30 R

Granskning och bedömning av kvalitetsarbete vid fem lärosäten

Högskoleverkets rapportserie 1997:1 R

Högskoleutbildningar inom vård och omsorg – En utredning

Högskoleverkets rapportserie 1997:2 R

Granskning och bedömning av kvalitetsarbetet vid Högskolan

Kristianstad

Högskoleverkets rapportserie 1997:3 R

Examensrättsprövning – Lärautbildning vid högskolorna i Borås och

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Högskoleverkets rapportserie 1997:4 R

Granskning och bedömning av kvalitetsarbetet vid Högskolan i Örebro

Högskoleverkets rapportserie 1997:5 R

Granskning och bedömning av kvalitetsarbetet vid Högskolan Dalarna

Högskoleverkets rapportserie 1997:6 R

Granskning och bedömning av kvalitetsarbetet vid Operahögskolan i

Stockholm

Högskoleverkets rapportserie 1997:7 R

Kvalitet och förändring

Högskoleverkets rapportserie 1997:8 R

Rekruteringsmål för kvinnliga professorer

– ett regeringsuppdrag

Högskoleverkets rapportserie 1997:9 R

Examensrättsprövning – Utbildningar vid Södertörns

högskola

Högskoleverkets rapportserie 1997:10 R

Examensrättsprövning – Grundskolläraexamen vid Högskolan i Falun/

Borlänge, Högskolan i Jönköping och Högskolan i Kristianstad

Högskoleverkets rapportserie 1997:11 R

Examensrättsprövning – Utbildningar vid Företagsekonomiska Institutet,

Stockholms Musikpedagogiska Institut och Högskolan i Gävle/Sandviken

Högskoleverkets rapportserie 1997:12 R

Granskning och bedömning av kvalitetsarbetet vid Högskolan i

Karlskrona/Ronneby

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Examensrättsprövning – Utbildning i pedagogiskt drama vid tre

folkhögskolor

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Granskning och bedömning av kvalitetsarbetet vid Högskolan i Gävle/

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Poänggivande uppdragsutbildning i högskolan

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Granskning och bedömning av kvalitetsarbetet vid Mälardalens högskola

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Högskoleverkets rapportserie 1997:21 R

Granskning och bedömning av kvalitetsarbetet vid Kungliga

Musikhögskolan

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