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Abstract

Both gender equality and education policy are important priorities on the political agenda in Europe. The Research and Training Network "Women in European Universities" focuses on higher education and women's career-perspectives in systems of higher education of seven European countries (Austria, France, Germany, Poland, Spain, Sweden and the United Kingdom). The main focus of the project is to explore the "glass-ceiling" that women meet when they chose a career in academia and strive for top rank positions such as professorships.

As a first step in our research, it is important to understand the different systems of higher education, as well as recent changes and challenges to women in academia. This contextual analysis is one result of the first phase of the research project and shall provide information about the Swedish system of higher education.

The Swedish system of higher education underwent fundamental changes in both organisational form and ideological practice during the last thirty years. Especially the three reforms in the 90's gave the higher education system in Sweden a new face: They gave more weight to management structures, fixed-term contracts and focused more on an Anglo-American model of higher education than on the "old" Humboldtian model. The reforms brought important changes for the Swedish system of higher education, but certain patterns remain untouched. One can still find the "hidden binary system" within university colleges representing institutions to undergraduate education and universities that offer post-graduate education and research. And to a certain extent, this builds the ground for the remaining persistence of sex-specific divisions in both fields of study and different posts on the academic career ladder.

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Introduction

In the last thirty years the Swedish system of higher education underwent several structural changes. The most important was the reform in 1977, which started a process of enlargement. The number of students, academic staff and institutions with research resources increased from the 80's until today. In the 90's a new reform wave started: A reform of the undergraduate education in 1993 introduced a new resource allocation system, reduced the central control mechanisms of the government and gave the institutions of higher education more responsibility and new scope in questions of organisation and finances. In 1998 a de-centralisation reform of the higher education governing bodies gave more weight to the governing board as the decision-making body at universities and university colleges. At the same time external members at the governing board, appointed by the Swedish government, became a majority and thus obtained a decisive role in decision-making. A promotion reform in 1999 was aimed at increasing the number of professors and to balance teaching and research as job components. At the same time the system for appointment of academic staff (especially professors) was deregulated and the old tenure system was abolished.

The following text has mainly two aims: First it will give a description of the Swedish higher education system as we find it today and of the reforms which shaped this system. A strong attention is given to the changes in the organisational structure, that is the change towards a more management focused Anglo-American model. Secondly the text focuses on women in higher education and their career prospects in academia. Did the enlargement of the higher education system break sex-specific patterns in the choice of the discipline and the form of the study programme? To what extent did the reforms change women's possibilities to advance on the career ladder in academia? In this question a special focus is given to the promotion reform of 1999 and the consequences for women who want to advance to a position as a professor.

Chapter one gives a short presentation about the history of higher education in Sweden from the beginning in the 15th century until the time after World War II. In chapter two the reforms of the 70's and 90's are presented. The reforms of the 90's are further discussed in the later chapters. The third chapter focuses on the system of higher education itself. Of special interest are the changes in undergraduate and post-graduate education, the system of research and changes of the career path for academic staff. Chapter IV discusses the equal opportunity measures that are intended to improve women's situation on the labour market and in academia.

I. Historical Background

Until the late 70's the Swedish system of higher education i.e. the university system was heterogeneously structured. The first universities founded in Sweden were the University of Uppsala (1477) and the University of Lund (1666). During the 19th century the system of higher education was enlarged by colleges, which were founded in the biggest cities of Sweden, Stockholm and Gothenburg. Later several university colleges completed the system of higher education.

During the 19th century the whole Swedish society underwent extensive changes. New market relations, the emergence of new ideologies such as the bourgeois individualism and a stronger emphasis on "meritocratic ideals" transformed Sweden into a modern society. As a consequence old societal patterns broke up and both the society and the government were confronted with new challenges and demands. For example, women received the right of inheritance, which became one of the reasons why old marriage patterns broke down and a surplus of unmarried women now able to support themselves grew up. The Swedish government answered to the new social demands and played an important part in changing the living conditions for women. "Gender policy was transformed through government institutions and in the debate, we can find traces of the state as both arena and actor." (Rönholm 1999:231)

In the context of societal changes and especially after the reform in the Swedish higher education institutions in 1870 the discussion arose about women's right to higher education. In 1873 Swedish universities were opened for women. Betty Petterson was the first woman who started to study at a Swedish university (1872 in Uppsala). In 1875 she passed the academic exams as the first woman and later she became the first female teacher at a secondary school for boys.

Women's encroachment on higher education faced opposition of different kinds. The discussion in the middle of the 19th century focused mainly on women's fate to raise children and to be married. Later, when higher educational institutions were already confronted with female students, the opposition to women's right to higher education were based more on "scientific" arguments. It was claimed that women simply had not the proper biological and mental resources to meet the requirements of higher education. But women's penetration into the universities was more than just a cultural point of controversy; it became also a question of power and competition. The female students wanted to use their academic degrees; they aimed at professional and academical careers and slowly became competitors to their male colleagues. The first woman who taught at a Swedish university and became a lecturer was the lawyer Elsa Eschelson. In 1937 Nanna Swartz became the first female professor at a Swedish university. She was professor in medical science.

Until the 1930's and 40's the Swedish universities had close relationships to their German counterparts. With World War II this connection broke up and the Swedish scientific community became more open and influenced by Anglo-Saxon patterns of education. This change or new orientation in the Swedish system of higher education became mainly visible in two facts. Firstly the English language took the place of the German language, which earlier was taught as the first foreign language in school. (Ringborg 1995:11) Secondly Germany was during a long period one of the leading scientific communities in Europe, its Humboldtian approach influenced even other European countries such as Sweden. A central points in the Humboldtian idea is to form a way of individual study and to participate in research. The Humboldtian University is not an institution that prepares for certain professions, but follows the ideal of education as a form of development of the human being.

After World War II the Humboldtian influence on the Swedish higher education faded out. The quite different view on higher education is getting clear, when one takes a look at the terms, which were in use. While the German debates still claim the idea of "Bildung" as the aim of higher education, Swedish debates focused more on the aspect of "utbildning", which refers more to a purposeful, job-preparing education. (For a broader reflection about "Bildung" in Sweden and Germany see Liedman 1993:74 ff. in Rothblatt / Wittrock)

A closer look at the ongoing discussions about the tasks of higher education shows that the Humboldtian idea still is very alive – even though the term particularly changed, today the concept of lifelong learning is more popular. (See Bladh 1999) One of the ideas behind the expansion of the system of higher education was to open universities and university colleges for new cohorts and to realise the idea of lifelong learning. But distinct concepts of education as "Bildung" or "utbildning" still characterise the recent discussion about higher education. Possibly one could draw the line between universities – which still claim the ideal of "Bildung" - and university colleges – which follow the more practical approach that education provides knowledge which shall be useful. (See Lange 2001)

Especially during the 20th century the Swedish higher education system underwent a range of transformations. In 1968 the Swedish government started a reform in higher education, which officially was called "U68" but in the late 70's was popular called the "rolling reform". (Gelbrich 1995:41) The latter name hints already to the fact, that it took a long time for this reform to become a written law – the reform was not enforced until 1977. Meanwhile some of the ideas from 1968 were hotly debated, modified or forgotten. The reform in 1977 started a reform-wave, which is still ongoing today. But until the middle of the 80's one could not recognise any greater changes in the system of higher education. The reform gained momentum not before the end of the 80's. Finally the reforms of the 90's brought the major changes in higher education

characterised by restructured systems of undergraduate and post-graduate education, more managerial influence on organisational matters and new career patterns.

II. Reforms

The structure of the system of higher education in Sweden as we see it today is based on the results of the reform in 1977.¹ At that time all types of higher education were incorporated into a single system, with common entry requirements for the students and common staffing conditions for all higher education institutions. This reform implicated a huge degree of national regulation and planning. Tenure teaching positions for example were shaped and appointed by the Swedish government. The enlargement of Sweden's university colleges is also a result of the reform in higher education in 1977. It is a product of the government's ambition to enlarge the number of students in general as well as the number of institutions of higher education. During the first period after the reform one could not notice any greater changes. But in the late 80's the number of students who started their studies at a university college increased. During the first ten years after the reform 20 per cent of all entrants chose a university college. This number increased up to 36 per cent in the academic year 1997/98. (Ministry of Education and Science 1999)

A closer look at the Swedish system of higher education at that time shows, that it was not a homogeneous system: One found two different career paths in higher education, what means that one had to chose between a teaching career or a research career. This division was even strongly linked to the institutions of higher education. The universities, as the "classic" institutions of higher education, were still the institutions of research. Here one could advance on the career ladder for academic research. The university colleges in contrast answered mostly for the undergraduate education that is why they only could employ senior lecturers but not professors. (Sjölund 2001:64) As a result the university colleges could just provide teaching careers for those interested in an academic career. In fact the term of "a hidden binary system" came into use. (Dahllöf in Dahllöf/Selander 1996:200)

If the reform in 1977 was the basis for the increase of new higher education institutions and the enlargement of the whole system², then the reform wave in the 90's changed the organisational structure and the role of the Swedish State in higher education. In the last ten years three important reforms came into action: In 1993 a reform of the allocation system in undergraduate education. In 1998 a reform of the governing bodies in higher education institutions to place. Finally in 1999 a new system for the appointment of academic staff was enforced.

The Higher Education Act in 1993 removed the reins of national regulation and gave more influence and responsibility to the higher education institutions,

¹ If not other sources are cited, the informations about the reforms and the structure of the system of higher education are based on: Swedish Institute 1998.

² "Enlargement of the whole system" refers to the growing number higher education institutions, students and academic staff.

especially in questions of their finances and organisation. The new resource allocation system should mainly reduce the central control of the Swedish State and improve the quality of undergraduate education. (Sjölund 2001:62)

In 1998 the Ordinance for Higher Education from 1993 was changed concerning the governing boards of the universities and university colleges. These boards contained elected members from the studentship and the academic staff and external members, who were appointed by the government. But with the changes in 1998 the influence of the external members was strengthened. On the one hand, because the external members are appointed by the Swedish government, the reform secured a position of power by the government over the institutions of higher education. On the other hand the institutions of higher education are now confronted with a stronger focus on marketing and management strategies in their decision-making bodies.

In a third reform, 1999, new regulations for the appointment of academic staff were enforced. Before this reform, recruitment was the only way to advance on the teaching or research career ladder in higher education. The aim of the new reform was to build up a single career ladder in higher education. All posts in academia should have both teaching and research commitments. At the same time the tenure system for professors reached its end. The conditions of employment for academic staff are now more or less the same than as for other people on the labour market. (Sjölund 2001:64)³

The three reforms in the 90's changed a lot in higher education, but the main-objective of the enlargement of the system of higher education is still in force. The national statistics may however be misleading at first glance: in 1995 we find 73 institutions of higher education in Sweden but in 1999 just 52. These numbers seem not to show an enlargement of the system. But one has to understand that most of the university colleges for health related sciences were integrated into bigger university colleges or universities. This explains the decreasing number. At the same time new university colleges and universities were founded. So the number of higher education institutions with research resources increased during the same period. In 1995 Sweden had 13 institutions with research resources, four years later six new institutions were established. A typical development for the 90's is the transformation of some university colleges into universities. The latest examples are the universities in Karlstad, Växjö and Örebro; these former university colleges are working as universities from the 1st of January 1999. According to the government bills the enlargement of the Swedish higher education system should mainly be directed towards the areas of Natural Science and Technology. In one of the latest government bills it

³ It should be pointed out that this is not as drastic as it might sound since the laws governing employee security in Sweden are well-developed. Any person in Sweden employed longer than nine months has a right of continued employment. Causes for terminating employment are strict and narrow and usually related to economic conditions.

is recommended, that 70 per cent of all new university or university college places should be created in these subjects. (Swedish Government 2000) That is why the new founded (or transformed) universities focus mainly on technical disciplines and the Natural Sciences.

A look on the numbers of students and academic staff shows the expansion of the higher education system. (Table 1)

Table 1: Number of Students and Academic Staff in Sweden 1995-1999, Total Number and Percentage of Women

YEAR	STUDENTS		LECTURERS		SENIOR LECTURERS		PROFESSORS	
	Total Number	% of Women	Total Number	% of Women	Total Number	% of Women	Total Number	% of Women
1995	269680	57	6282	42	5325	22	2177	8
1996	285802	57	6465	45	5629	23	2264	9
1997	301090	58	6333	46	5515	23	2529	11
1998	305578	58	7059	45	6042	24	2390	11
1999	310137	59	7634	50	6042	25	2671	12

Source: Statistics Sweden (2001, 2001a) UF 20, UF 23

In short one can conclude, that the Swedish system of higher education faced two important changes in the 90's. First the number of institutions with research resources, just as the number of students and academic staff, increased. Second the system of higher education took a step away from the Humboldtian model toward an Anglo-American model, at least in organisational questions. (Sjölund 2001:77)

The following chapters describe different parts of the Swedish higher education system and the three mentioned reforms in more detail. Discussion about the outcome of the reforms is presented in these chapters.

III. The Structure of the Higher Education System

Today we find several types of institutions of higher education and research in Sweden:

- There are 11 universities in Sweden (Uppsala, Lund, Gothenburg, Stockholm, Umeå, Linköping, Luleå University of Technology, Sweden's University of Agricultural Science, Karlstad, Växjö and Örebro) and two specialised institutions of higher education and research in Stockholm (Karolinska Institute and the Royal Institute of Technology)
- Beside the universities we find one major private institution, run by a private foundation with central government support (Stockholm School of Economics) and two institutions in non-state ownership organised through a foundation (Chalmers University of Technology and the University College of Jönköping).
- There are 23 university colleges in Sweden, some of which are permitted to offer postgraduate degrees. These colleges are the university college in Karlskrona/Ronneby (Master of Arts and doctoral degree in techniques), the college in Malmö (Master of Arts and doctoral degree in medicine) and the college in Kalmar (Master of Arts and doctoral degree in natural sciences).
- In the 80's the colleges for health-related sciences were administered by the county councils. Now nearly all these colleges are integrated into either the public universities or university colleges – the college for health science in Jönköping is the only exception.

Post-graduate or doctoral education is provided at the following higher education institutions: the universities in Uppsala, Lund, Gothenburg, Stockholm, Umeå, Linköping, Luleå, Karlstad, Växjö and Örebro. The Karolinska Institute, the Royal Institute of Technology, the University of Agricultural Science, the Stockholm School of Economics, Chalmers University of Technology and the University College of Jönköping offer also research training for post-graduate students. The university colleges in Karlskrona / Ronneby, Malmö and Kalmar are also permitted to offer limited post-graduate training. (National Agency for Higher Education 2000)

All the Swedish institutions of higher education are under the jurisdiction of the Ministry of Education and Science. An exception is the University of Agricultural Science, which is under the jurisdiction of the Ministry of Agriculture, Food and Fisheries. Thus, the universities and university colleges are in direct contact with the relevant Ministry. The employees at the higher education institutions are mostly national civil servants; the exceptions are teachers and scientists at institutions in non-state ownership.

There are three national agencies dealing with different aspects of the higher education system. The most important is the National Agency for Higher Education (*högskoleverket*) which is responsible for supervision of universities

and university colleges activities, evaluations of examination decrees and the development of higher education in Sweden and Europe. The Agency for Service in Higher Education (*verket för högskoleservice*) administrates the admission of students to certain programmes of study by order of universities and university colleges. The Central Board for Study Support (*centrala studiestödsnämnd*) deals with the organisation and distribution of financial support to students.

1. Undergraduate Education

In order to study at a Swedish University or University College certain preliminary requirements have to be fulfilled. The basis requirement is the completion of a national programme of a college preparatory school, or an equivalent qualification. For certain courses special qualifications may be needed. In these cases the institutions of higher education decide what selection procedure is most suitable. Working experiences, results of the national university aptitude test or even upper secondary grades may count as special qualifications.

All undergraduate education is given in courses since 1993. Students combine their courses in order to form either a study program or a major. The teaching methods and examination procedures are decided by each university or university college. The given study programme is organised according to a point system – one point corresponds to one week of full-time study. The academic year is divided into two terms (the spring-term runs from mid-January to the beginning of June, the autumn-term from the end of August to mid-January), each term runs about 20 weeks, which means, that the academic year consists of 40 points. Usually the given marks are Fail, Pass or Pass with Distinction, but the institutions are free to choose other systems of rating.

Generally two kinds of basic degrees are offered: general or professional degrees. The latter are awarded after studies that lead to specific professions, e.g. University Diploma in Education for Upper Secondary School. The general degrees are:

- The Diploma (*högskoleexamen*) is awarded after studies that are equivalent to 80 credit points; this corresponds to a period of two year of full-time study.
- In order to get the Bachelor's degree (*kandidatexamen*) three years of full-time study are demanded, this corresponds to at least 120 credit points. Half of the 60 points are the major subject. The points also include a 10-point thesis.
- The Master's degree (*magisterexamen*) is awarded after four years of full-time study, i.e. an amount of 160 credit points. 80 points are demanded in the major subject, including a thesis of 20 points or two theses of 10 points.

The Swedish State provides financial aid for students.⁴ The aid is divided into grants and loans. Since 1999 the Swedish government has worked on a reform of the study aid system. The new system, which came into force in July 2001, is more generous and easier structured than the old system. A student can receive a maximum of 7089 SEK, according to both the old and the new system. In the old system 27,8 per cent of the money was paid out as a grant, the rest was a loan. In the new system 34,5 per cent of the maximum amount (2449 SEK) is paid out as a grant. The study grant is counted for the pension. The loan part of the study aid has to be paid back; even this is easier to handle in the new system. (Ministry of Education and Science 1999a)

In the 80's and in the beginning of the 90's women tended to choose shorter programmes of undergraduate education. In 1990/1991 70 per cent of all the students who started a study programme of less than 120 points were women. Among the students who chose a programme including 120-140 points, 55 per cent were women. The percentage of women among the students who choose degrees with the longest study time was just 40 per cent. (UHÄ 1992:46 cited by Riis/Lindberg 1996:19) Today this pattern has changed the percentage of women in programmes, which run a longer time period increased in the 90's. (See Statistics Sweden series UF 20) This may be a result of several equal opportunity programmes, but it is also likely, that it is a result of the improved situation on the labour market. Men enter the labour market instead of remaining in the education system; a hypothesis is that women enter certain study programmes because these programmes have lost their attractiveness for men.

In 1993 a new resource allocation system for undergraduate education was introduced. The system is based on objectives and results. For example, the number of students completing courses gives the universities and university colleges the basis for their financing. The parliament determines appropriations for each institution of higher education based on the number of students places assigned the institution in relationship to the actual number of students completing their courses. Post-graduate education and research are financed independent of undergraduate education. The money supply is distributed to the institutions as lump sums. The appropriations are related to both the amounts of credit points earned by the students (60 per cent of the appropriations) and to the number of full-time equivalent students that are taught at the institution (40 per cent of the money). For purpose of resource allocation, courses have been arranged into twelve fields of study. These compare mostly with the traditional academic faculties. Nursing, education or fine arts are additional fields. For each field per capita numerations are given, that will be applied for full-time students and full-time credit points. The per capita remunerations described here are the same for all universities and university colleges.

⁴ In 1998 financial aid was given to 297.800 students. (Minsitry of Education and Science (1999a))

Each university or university college is negotiating a so called education task contract – valuing for three years – with the Ministry of Education and Science. In this contract the maximum sum of money that could be allocated is established. The contract fixes certain objectives – negotiated between the institution of higher education and the Ministry – which the university or university college has to fulfil in order to receive the maximum sum of appropriation. At that point the institutions of higher education are permanent accountable to the Ministry i.e. the government. In questions of distributing the money within the universities and university colleges, there is a greater degree of freedom and independence for the institutions than previously.

Distant tuition, mostly given in the form of correspondence courses, have a long tradition in Sweden and most universities and university colleges offer some courses and study programmes on this basis.

2. Post-graduate Education

Post-graduate education is provided at the institutions of higher education listed above. To be admitted to post-graduate education one must have completed an undergraduate programme of not less than 3 years full-time study. At least 60 points earned under this period are necessary in the subject concerned. Beside these requirements the student's ability for research training will be assessed by a faculty board. The financing source for the post-graduate studies is the research appropriation to which every faculty is entitled. The research means for post-graduate studies can be spend either on posts, e.g. assistantships, or on fellowships. The decisive competence is made by the faculties.

A doctoral student has to take part in a range of courses and to write a doctoral dissertation. During the period of research training the student has the advantage of individual supervision, usually given by a professor of the faculty. After four years the studies are expected to be completed concluding with public defence of the dissertation. The dissertation is graded either Pass or Fail. After passing the doctoral courses and if the dissertation is defended successfully, the doctor's degree is awarded. The dissertation is published before the defence.

The institutions of higher education which offer research training for doctoral students have reintroduced a second degree of post-graduate education – the master of arts (*licentiat*). This degree is awarded after a shorter period of research training, usually after 2 or 2 1/2 years. Like the dissertation the Master of Arts needs to pass a defence, but it is non-public. It is possible to supplement the Master of Arts at a later time in order to earn a doctoral degree.

Usually the faculties provide the research training for post-graduate students. But since the 80's another form of post-graduate study developed – the research schools (*forskarsskolor*). There is no clear definition about what a research school in Sweden really means. Some of them are no more than a short

programme of courses for post-graduate students; others provide a complete training programme for four years. Today we find about 150 research schools within all subjects of higher education institutions in Sweden. Half of these schools have just one financier, mostly the own university or university college. It is more usual for technological oriented research schools, to have an external financier. Research schools concerned with humanities and social sciences are more dependant on their university or university college for funding.

Research training in graduate schools is in danger of concentrating on the expense of time for independent studies. (National Agency for Higher Education Rapport 2000a) However, the advantages of better supervision, interdisciplinary work and the possibility to build up networks weighs in their favour. The need to enlarge the system of research schools was pointed out by the Swedish government in one of the latest bills *Forsking och förnyelse* (Government Bill 2000/2001:3). In the next three years 16 new research schools are planned, the Swedish government will provide 214 million SEK for them. The need for more research schools in social and cultural sciences was also pointed out by the government.

3. Research

Research in Sweden was and is still strongly connected to the universities. In the 40's Sweden started to structure the organisation of research councils after the American and British model, which means that a system with flexible finances for research was introduced. When Sweden started to develop its universities and university colleges in the 60's, the resources for research increased successively (see also table 2). As a consequence a need for a national research policy increased. 1979 the Swedish government presented the first government bill for research policy. In the 70's and 80's a pluralistic research system with independent financial sources was shaped.

Table 2: Expenditure on research and development (R&D) by sector. Million SEK, current prices.

YEAR	BUSINESS SECTOR	PUBLIC SECTOR	PRIVATE NON-PROFIT SECTOR	HIGHER EDUCATION SECTOR	TOTAL R&D EXPENDITURE AS PER CENT OF GROSS DOMESTIC PRODUCT
1979	6002	735	4	1870	1,86
1981 ⁵	8479	812	34	3995	2,32
1983	11733	920	40	5496	2,58
1985	17001	1100	44	6844	2,90
1987	20401	1290	41	8821	2,98
1989	23731	1401	36	11104	2,94
1991	28598	1695	35	11432	2,88
1993 ⁶⁷	33457	4163	330	12589	3,39
1995 ⁸⁹	44029	4300	93	13004	3,60
1997 ¹⁰	50151	2372	50	14346	3,71

Source: Statistics Sweden (2001) Statistisk Årsbok för Sverige

The Swedish government and the parliament are mainly responsible for the distribution of finances for the research. Here the Ministry of Education and Science plays a major part. The Committee for Research (*forskningsberedning*) is an advisory group for the government in questions of research policy. The Minister for Education and Science is the head of this group, which consists of scientists and representatives of the economy. A certain part of the financial resources for research is distributed directly from the government to the universities and university colleges – since 1997 all the Swedish universities and university colleges have fixed resources for research. The finances are distributed to four scientific areas: Humanities and Social Sciences, Medical Science, Natural Sciences and Technology. The government and the parliament decide how the finances are distributed among the scientific areas at a certain university or university college. The university or university college, then decides how the finances are distributed among the faculties.

⁵ Increased coverage for business sector and higher education sector from 1981.

⁶ R&D in municipal and county council sector is included for the first time in 1993. R&D expenditure by the municipalities amount to SEK 229 m and R&D expenditure by the county councils to SEK 1933 m.

⁷ The population in the Private non-profit sector has varied over the years.

⁸ Public sector: R&D spending by municipalities and county councils is estimated.

⁹ Higher education sector: current costs only.

¹⁰ Public sector: Municipalities and county councils are excluded.

Another part of the public resources for research goes to the Research Councils (*forskningsråd*), sector authorities and research-foundations. Scientists working on certain research projects can apply for financial contributions from these institutions. Until the 1st January 2001 four Research Councils existed, each dealing with a certain scientific area: The HSFR was concerned with Humanities and Social Sciences, the MFR was responsible for Medical Sciences, the Natural Sciences were covered by the NFR and the TFR was the council for research in Technical Sciences. Beside this, interdisciplinary research was financed by the Council for Planning and Co-ordination of Research (*forskningsrådsnämnd*). Since 2001 the Science Council (*vetenskapsråd*) is concerned with the tasks that earlier were handled by the four Research Councils and the Council for Planning and Co-ordination of Research. (Government Bill 1999/2000:81; 200/2001:3) Within the new Science Council three new councils for certain fields are established, these councils are responsible for the fields of Humanities and Social Sciences, Medicine and Natural Sciences and Technology. The new Science Council has in 2001 a budget about 1878 millions SEK. (Government Bill 2000/2001:3)

With the first government bill about research policy in 1979 the so-called sector research principle was introduced. This means that each sector in the society evaluates its needs of investments in research and development and weights this against other needs in order to support the sectors development. Even sector research is mostly done at universities and university colleges. To finance certain sector's need of research and knowledge special bodies for sectoral research developed; today there are about 30 such institutions with resources for research and development.

Beside these institutions there are also some research foundations e.g. the Foundation for Strategical Research (*SSF*), the Foundation for the Development of Knowledge and Competence (*KK*), the Foundation for Environmental-strategic Research (*Mistra*), the Foundation for Care / Nursing and Allergy Research (*Vårdal*) and the Foundation for Internationalisation of Higher Education and Research (*STINT*). These public foundations are financing research with an amount of 1,5 billion SEK per year. Beside the public financiers there are also private foundations which support research. The Jubilee Foundation of the National Bank (*RJ*) is mainly concerned with financing projects in the scientific areas of Humanities, Theology, Social Sciences and Medicine. In 1998 this foundation distributed 300 million crowns to several research projects. The Knut and Alice Wallenberg Foundation and the Cancer Foundation (with a budget of 270 million SEK per year) are other private financiers of research.

A further source of money for research projects are several academies which are associations developed within the scientific community in order to support research. The Royal Scientific Academy (*KVA*) has even two research

stations, Kristinebergs station for Marine Biology and the station for Natural Science in Abisko.

The research councils and the foundations are able to give research means to scientists and research projects. Research about the councils praxis in the granting of research funds shows that men are more successful than women in obtaining research grants.

Anita Nyberg (1993) noticed that in 1993 17 per cent of the post-graduate students were women. Among the scientists who applied for research funds from the research councils 13 per cent were women and among the scientists who were granted money from the research councils 12 per cent were women. Nyberg assesses three possible explanations of this phenomenon. A first hypothesis is that women apply "wrong". That means that they apply for research funding where there is not enough money. Nyberg showed that this hypothesis is not true. A second hypothesis seems more fruitful: women have the wrong status, i.e. the low percentage of women among professors is one possible explanation why women are not as successful as men in applying for research means. But according to Nyberg a third hypothesis is even more probable; women's applications are judged in a different way compared to the applications of men. Nyberg argued that personal causes are not sufficient to explain the lower percentage of women than men who are successful to obtaining research grants. The correct reasons, according to Nyberg, are to be found in societal structural arrangements.

4. Organisational Structure

The Higher Education Act (*högskolelag*) and the Ordinance for Higher Education (*högskoleförordning*) of 1993 establish the juridical base for the organisational structure of the Swedish higher education institutions. Within these boundaries the universities and university colleges are free to shape their own form of organisation. By law the governing board (*styrelse*) is the highest body in every institution of higher education. It is responsible for questions concerning the organisation of the university or University College, the distribution of resources, admission decrees, employment decrees and so on. Teachers and students have the right to elect a representative to the board. But the rector just as the chairman and the majority of the other members is appointed by the government. The chairman is not an employee of the university or university college in case. The members of the governing board are appointed for three years. An exception is the rector; he or she is nominated by the members of the governing board and appointed by the government for a longer period, but not more than six years. The board has to elect a vice-rector; even he or she holds this position not longer than six years. To be appointed as a rector

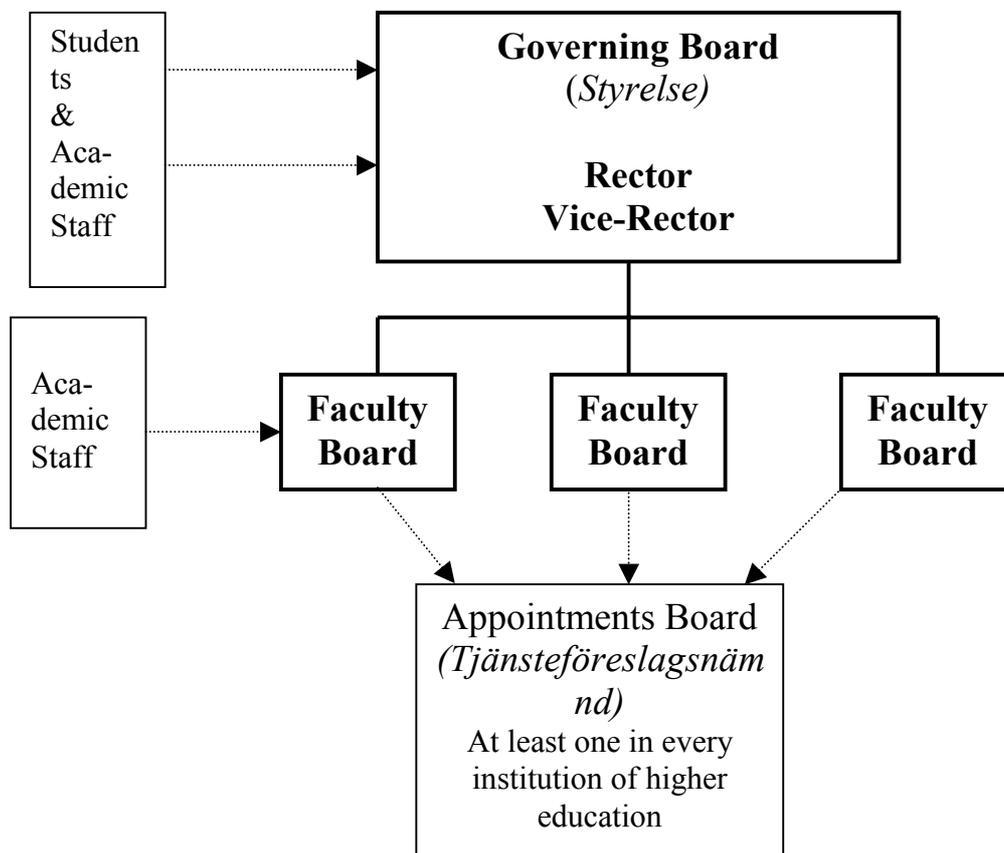
or vice-rector, one has to fulfil the competence demands for a professor- or lectureship.

The organisational structure varies within the different institutions of higher education. But on the basis of the Ordinance for Higher Education at least a rough structure can be sketched.

Every institution of higher education with more than one scientific area needs – according to the law – a faculty board (*fakultetsnämnd*). The faculty board is responsible for the research within the faculties and is even concerned with education if the governing board does not appoint another committee. The members of the faculty board are elected among the teachers in the faculties. But even people without teaching assignments at the faculty can become members of the faculty board, as long as they have scientific competence fitting this work.

The faculty board has to appoint members who build an appointments board (*tjänsteförelagsnämnd*), and is concerned with the evaluation of applications for teaching and research positions in the faculty. Every institution of higher education needs to have at least one of these committees. All the higher education institutions with different faculties need one committee concerned with appointment of staff for each faculty. The committee is appointed for three years and consists of a chairman, a vice-chairman and two other members.

Figure 1: Organisational Structure of Institutions of Higher Education

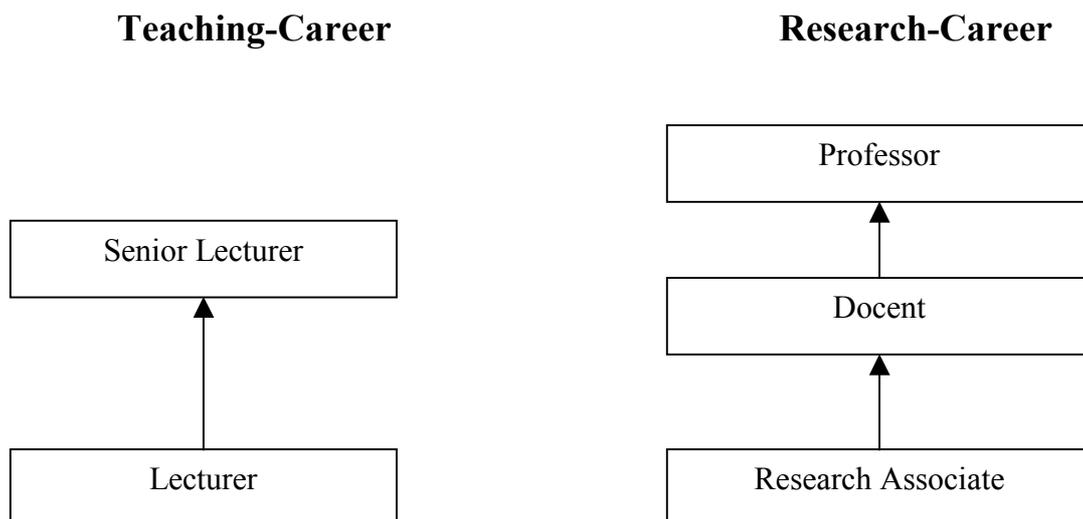


The position of the governing board as the central decision-making body at a university or university college was pronounced in the reform of the governing bodies in 1998. The governing board still contains elected members of the studentship and academic staff, but the role of the external members has been strengthened as they now build the majority. The governing board consists now of an external chairman, the vice chancellor / rector and 13 other members, among them three teachers and three students. (Sjölund 2001: 62) Even though a part of the collegial structure still persists in the organisation of the governing board a turn to a management structure is obvious. If one thinks in terms of academic freedom, this change is not without problems. A teacher or researcher may have to decide if he or she wants to show loyalty to the employer or wants to take part freely in the public debate. Being part of the public debate could present difficulties for the scientist, if the statements are in contrast to current policies at the institution, policies that are mostly created by people who are not a part of academia. (Sjölund 2001)

5. Academic Staff

Since 1993 the universities and university colleges are entitled to handle questions of their staff e.g. establishment of chairs, appointment of staff independently from the government. The Ordinance for Higher Education builds the frame for such decisions.

Figure 2: Career Patterns in Swedish Higher Education before 1993



With the Higher Education Act in 1993 even the structure of academic career changed. Before 1993 we find in Sweden two career-paths in the academy. One had to decide whether she or he wanted a teaching career or a research career. Teaching at universities and university colleges at that time was mostly provided

by senior lecturers and lecturers. Senior lecturers had already finished their PhD while it was assumed that lecturers would work on their doctoral thesis beside their teaching commitments. Precondition for a research career was the doctor title and then a post as research associate. Later one could advance to a docent and finally to a professor.

The career paths were not compatible and a decision for a teaching career – or the need to choose a teaching career because of several barriers – meant a loss of prestige, money and the possibility to work in research. Because research was, and still is, strongly linked to the universities, the university colleges appointed mainly lecturers and senior lecturers. Until 1999 most of the new founded institutions of higher education were university colleges. So a decision for a teaching career implied more or less that one had to focus more on these institutions and not on the universities as a working place.

As a result of the reforms in the 90's and especially the promotion reform in 1999 we find a quite different career structure in the Swedish academy today, but the influence of the old structure is obvious. The aim of the reform in 1999 was to increase the number of professors and to give teaching more weight in the academy. The new reform should lead to a transformation of the teaching positions in academia. The intention is that all positions would include both research and teaching commitments. The two career paths described above were combined and now build one structure. However, some posts are strongly linked to teaching while others are more concerned with research. Even if there is one career structure now, the promotion reform build up two career paths within this structure – and both are still not compatible.

According to the Ordinance for Higher Education of 1993 we find the following categories of academic staff: professors, senior lecturers (*högskolelektorer*), lecturers (*högskoleadjunkter*), doctoral candidates with employment and research associates.

Lecturers are mostly concerned with teaching assignments in undergraduate education, but it is assumed, that he or she is working on a doctoral thesis. Because the teaching commitments for lecturers are nearly 100% of the working time, the PhD becomes something that is more often pursued at one's own expense during non-working time.

Doctoral Candidates with employment have some teaching commitments (around 20% of their time), but use most of their time to work on their doctoral thesis.

In order to get the post of research associate, a post that only implies work in research, a doctorate is needed. These posts are time limited to four years. In that time one should earn the qualifications that lead to the title of a "docent", in one is to advance on the career ladder.

Even for the post of a senior lecturer a doctorate is needed. This post contains duties in both research and teaching.

Table 3: Time for Research, Teaching and other Working Duties for Academic Posts.

POST	TIME FOR RESEARCH	TIME FOR TEACHING	TIME FOR ADMINISTRATI ON ROUTINES
Professor	Most of their time	25 %	10 %
Senior lecturer	20 %	70 %	10 %
Lecturer	10 %	80 %	10 %
Research Associate	Has only Research Commitments		

Source: National Agency for Higher Education 2001: 24

Professors have some teaching commitments, but are mainly concerned with research and postgraduate supervision. Whether teaching, research or supervising is weightier may vary, depending on the kind of professorship. A chair professorship may allow for more research time than a professorship that is not related to a chair.

All members of academic staff sign a contract concerning their working time. At most institutions of higher education the relation between time for teaching, research and other working activities correspond to table 3. But there are of course differences, sometimes quite substantial. In the Ordinance about Employment (*anställningsordning*) of the Gothenburg University it is claimed that all teachers should do research at least 25 per cent of their working time. What type of teaching is assigned a professor, undergraduate or graduate teaching, is treated differently at different institutions of higher education. At some university colleges e.g. Kalmar, lecturers without a doctorate are allowed the same amount of research and teaching time as their colleagues with a doctorate. In effect, senior lecturers with a doctorate at these institutions have less time in their position for their research compared to other senior lecturers with a doctorate. (National Agency for Higher Education 2001: 7 R, p.24)

The promotion reform of 1999 combined the former two career paths into one, so that people with teaching positions (like lecturers and senior lecturers) can now advance into research positions (like research associates or professorships). But at the same time two new uncombinable career paths emerged: the first path can be called the "recruitment path", the second the "promotion path" (Sjölund 2001:65f.) In other words the question is not any longer if one wants to follow the teaching or the research career path, but if one wants to advance on the academic career ladder by recruitment or by promotion.

5.1. The Recruitment Path

This career path starts with the application for a post as a doctoral candidate with employment; this means the participation in research programme (usually limited to four years) with a few teaching commitments in undergraduate education. After the awarding of the doctorate one applies for a post as a research associate. As already mentioned this appointment is limited to four years. After this period as a research associate one should have earned the qualifications for the title of a docent. A docent is only a title, not a position. One can work as a docent at an institution of higher education, but she or he is paid out of external funding which he or she obtained. The next step on this career path is then the application to a position of a senior lecturer or professor. But one has to wait until such a position is announced.

The Ordinance for Higher Education rules also the appointment of positions in the higher education system and the demands in qualification that have to be fulfilled by the applicants. Universities and university colleges are permitted to create a new post for a teacher in higher education, i.e. a professor- or lectureship. Alternatively an already established post can be reconsidered. In both cases the governing board is the deciding authority. The subject and working tasks of the new position have to be approved before the position is announced.

After the announcement the appointments board assess all incoming applications. According to the Ordinance for Higher Education the applicants for the post of a research associate, a senior lecturer or a professor needs a doctoral degree. This is not demanded of the applicants for the post of a lecturer. The applicants have to show scientific and pedagogical skills. The information about requirements for teaching positions at universities and university colleges are quite simple and both are given in the Higher Education act and the Ordinance for Higher Education. This can be seen as a sign of the greater independence of higher education institutions in questions of establishing positions and appointing staff. Before the Higher Education Act was enforced in 1993, the establishing and appointing of professorships was handled by the Swedish government. With the higher education reform in 1993 some of the ties between the institutions of higher education and the state have been untied. (See Riis / Lindberg 1996:48)

If the committee has to assess the applications for a professorship, then three special members (experts) are required. If the committee is concerned with the applications for a senior lecturer position, than two special members are required. There are no special rules about experts for the appointment of research associates, but it is usual to appoint one.

After assessing the applications, the appointments board has to pick the most qualified applicants (*tättgrupp*). In its statement the committee has to

recommend one applicant, that seems to be the most capable. Later the rector formally decides which applicant will be appointed to the new position.

As already mentioned the Ordinance for Higher Education presents a few criterions that the board should take into account. Different boards may have ways of expanding on the given criterions. But in every case, the Equal Opportunity Act and the question of equality in the faculty has to be considered. This means the board has to show in its statement how they took account of the aim of supporting the underrepresented sex in the position under consideration. The characteristics of the recruitment path are the following:

- All appointments, beside the senior lectureship and the professorship, are time limited.
- Applicants have always to wait until these posts are announced.
- The procedure of appointment is highly formalised.

5.2. The Promotion Path

A career on the promotion path starts with an employment as a lecturer. A lecturer who becomes qualified by completing his or her dissertation is promoted to a senior lecturer after an application for promotion. It is even possible to apply for promotion to senior lecturer on the basis of extensive development of teaching skills. From the position of senior lecturer and with additional research and teaching experience it is possible to apply for the title of professor.

In 1999 there existed even a kind of second promotion path. Even if one had not the required qualifications, this person could be promoted in certain cases. This happened when this person showed exceptional qualifications, such as pedagogical skills or qualifications in teamwork or administrative work. The characteristics of the promotion path are the following:

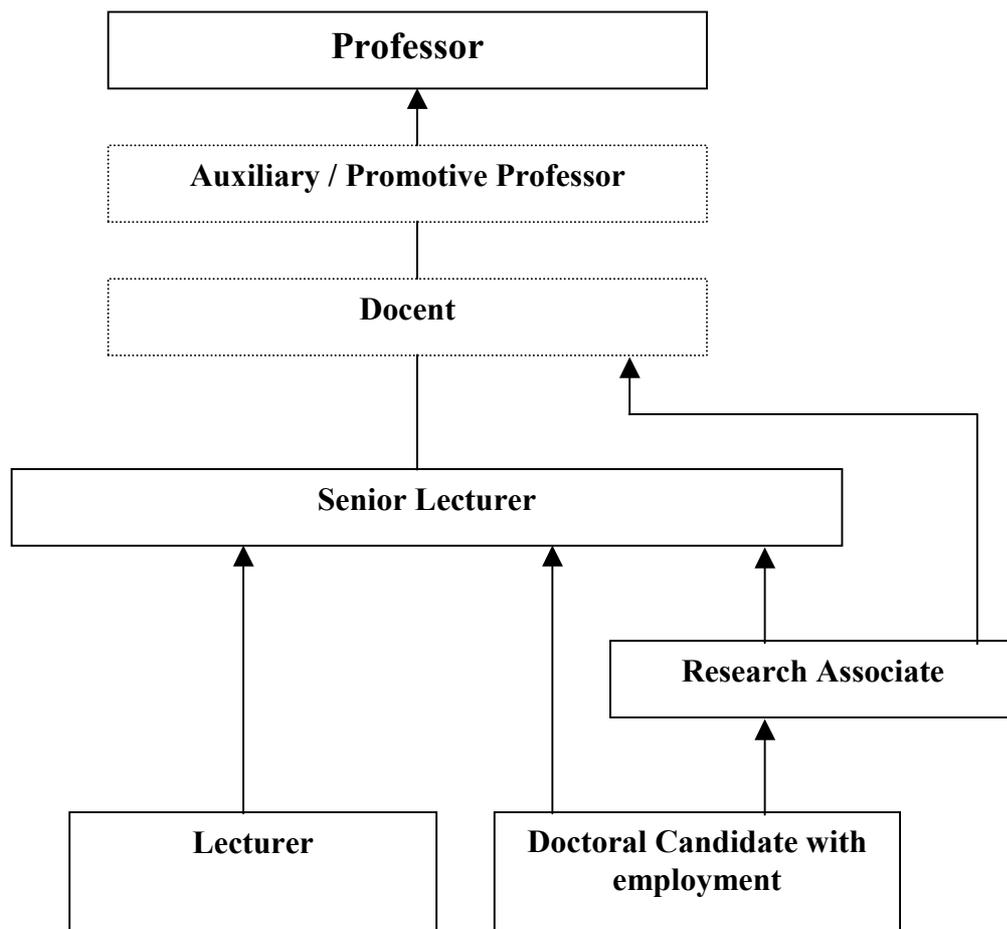
- All appointments are permanent.
- One can apply for promotion whenever he or she thinks that it is the right time. One has not to wait for certain announcements of an available position.

What does this new way to advance on the career ladder mean for women? A first investigation (National Agency for Higher Education 2001) shows the following. In the beginning of 1999 one found 2129 professors at higher education institutions in Sweden. In December the same year there were 2726.¹¹ Only 147 of the new professors were appointed by the recruitment path, 504 advanced by the promotion path. Table 4 shows the percentage of women among the new recruited or promoted professors in 1999 in different disciplines. Women are just as successful on the recruitment path as on the promotion path – in both cases 20 per cent of the new appointed professors were women. But a closer look at the different disciplines shows that women seem to be more

¹¹ Due to different measurement times and procedures the number of professors given by the National Agency for Higher Education is not the same than the number given by Statistics Sweden. See table 1.

successful on the recruitment path in Humanities / Religion, Law and Social Sciences. In contrast, the promotion path gave better results for women in Natural Sciences, Agriculture, Medicine and Odontology. But one has to be aware that these conclusions might be misleading. We do not know how many women or men applied for promotion or recruitment and therefore cannot compare the number of women as opposed to men who were successful as a per cent of the number who applied.

Figure 3: Career Ladder according to the Promotion Reform in 1999



As already mentioned 504 professors were appointed by promotion. In one of the latest reports of the National Agency for Higher Education this is seen as an indicator of the need for new ways to advance on the career ladder. Highly qualified senior lecturers built up a reserve of research talent and are now able to better use this through the title of professor. At the same time it is possible that not all who could apply for promotion really used this chance. These two contradictory tendencies make it even more difficult to make any judgements about the new development. On the other hand even the institutions of higher education might be cautious in questions of appointments because they don't

know what financial consequences these new appointments might eventually entail. (National Agency for Higher Education 2001: 26f.)

Table 4: New appointed professors in 1999

DISCIPLINE	PROMOTION		RECRUITMENT		TOTAL	WOMEN
	Total	Women	Total	Women		
Humanities / Religion	72	32 %	23	39 %	95	34 %
Law	3	0 %	3	33 %	6	17 %
Social Sciences	93	19 %	29	38 %	122	24 %
Mathematics	20	5 %	4	0 %	24	4 %
Natural Science	90	16 %	11	9 %	101	15 %
Techniques	75	8 %	56	11 %	131	9 %
Agriculture	17	24 %	3	0 %	20	20 %
Medicine	115	21 %	12	9 %	127	20 %
Odontology	11	27 %	3	0 %	14	21 %
Pharmacy	-	-	2	0 %	2	0
Veterinary medicine	-	-	-	-	-	-
Others	8	75 %	1	100 %	9	78 %
Total	504	20 %	147	20 %	651	20 %

Source: National Agency for Higher Education 2001: 46

Another, and may be more important, point is the question what prestige will the promotive and auxiliary professors have? Is it likely that they are accepted as full professors? Or is it not more likely that a hierarchy among professors can be established? From a meritocratic point of view it might be hard to see why a promoted professor should have the same prestige as a full professor. The full professor did at least fulfil all requirements for a professorship and faced the competition with others. The promoted professor got her or his title because of meeting minimum demands for professor qualifications but could not win a competition for a professors position. An auxiliary professor has the title professor because of other qualifications but also did not win a position of professor on the basis of competition with other scientists. Even though the promotion path allows for the use of the title of professor the actual position of the person is as a "senior lecturer". And as senior lecturer, a promotion to a professors title might give more working time to research as opposed to teaching

but the reform of 1999 was not accompanied with a financial increase to support either higher salaries for senior lecturers with professors title or support more research time for these senior lecturers.

Thus the main advantage of this reform is to increase the number of academics who can use the title of professor and also increase statistics of how many professors are involved in teaching. It was even suggested that the reform would increase the number of women professors as a percent of the total number of professors but it has yet to be shown. Although, early results have shown that the percentage of women professors has increased from 12 per cent of the total number of professors before the reform to 13 per cent today.

Part of the debate about the promotion reform has also suggested that the increase in the number of professors in the institutions brought about by promotion reform is a strategy to delete the power of the universities by minimising the power of professors through increasing their numbers and giving senior lecturers the prestige of professor.

If one keeps in mind the reform of the governing boards in 1998 and the problems for academic freedom that result from this, than one has to ask about the possible consequences that the promotion system might have. Who is promoted in this system? If a scientist is highly involved in the public debate, but makes pronouncements that are not in line with the policies of the institution of higher education, how likely is it that this scientist will be promoted?

IV. Promoting Women in Higher Education

As already mentioned, the Swedish government and its institutions played an important roll in transforming gender policy at the end of the 20th century. Both the government and the parliament in Sweden were some of the most active and definitely the most important agents in questions of gender equality. The main attention was given to the improvement of women's situation in the labour market.

Sweden's first Equal Opportunity Act came into force in 1980 and introduced two main principles of gender policy. First: the prohibition of discrimination against employees and job seekers based on sex. Second: The employer's duty to pursue purposeful work in order to further gender equality in working life. Since that time the Act has been supplemented with collective contracts and certain developments in the praxis.

In 1984 the Equal Opportunity Act was enlarged by certain agreements that mostly aimed at the working conditions in the public sector. In these agreements the need for positive discrimination (*positiv särbehandling*) is pronounced. If at a certain place of work one of the two sexes is not 40 per cent of the employees, then positive discrimination is needed. If applicants for a certain post have nearest equivalent qualifications then one applicant of the underrepresented sex is to be preferred.

The new Equal Opportunity Act from 1991 (enforced in 1992) confirms the principles of the earlier law, one point was added: the prohibition of general sexual discrimination. Positive discrimination is an exception here; it is not a discrimination against one single person but an instrument to reach the general aim of equal representation of both sexes.

Earlier the Minister for Equality Affairs, who is mainly responsible for the gender policy of the Swedish government, was subordinated to the Ministry of Labour. In the recent government the Minister for Agriculture (Margareta Winberg) is at the same time even the Minister for Equality Affairs. So the Equal Opportunity Ombudsman (*jämställdhetsombudsman*), who is concerned with the control and ensuring of the realisation of the Equal Opportunity Act, is today subordinated to the Ministry of Agriculture.

The Higher Education Act in 1993 required equal opportunity measures and a stronger attention to gender relations at institutions of higher education. Today every university and university college has an ombudsman or a working group which supervises gender equality. As already mentioned since 1993 education task contracts are negotiated between the institutions of higher education and the Ministry of Education and Science. In these contracts even equal opportunity tasks, e.g. percentage targets for women among new professors are established.

To alter existing gender patterns in higher education a range of reforms and measures have been carried out. The Equal Opportunity Act - enforced in 1980, with modifications in 1992, 1994 and 1998 - the Equal Opportunity Ombudsman or the different sections concerned with equal opportunity in the Ordinance for Higher Education should be named. In 1997 a range of professorships, post-doctoral fellowships and doctoral studentships for the underrepresented sex were created - including six professorships related to gender studies.

In 1995 the so-called Tham-decree became enforced. This decree was related to 30 professorships, which were created with a view to equal opportunities in higher education. The Tham-decree completed the Ordinance for Higher Education in chapter 4, section 15: An applicant of the underrepresented sex should be preferred as long as the qualifications were sufficient to fulfil the requirements of the professorship. This decree became the object for the Court of Justice of the European Communities. The court did not approve the Tham-decree, because the decree missed transparency. Without objective estimation of the applicant's qualification the decree beard the risk for automatism. But the importance of objective estimation was already pronounced by the court in the Marschall-case (C-409/95; ECR 1997 p.I-6363) Finally the aspired aim of equal opportunities and the enforced selection-method was not in parity.

With the news about the decision of the Court of the European Communities in July 2000 the discussion about equal opportunity measures arose again - especially when the Uppsala University decided to end their work on affirmative action. The University appointed an expert in order to evaluate whether affirmative action is compatible with European law. The result was a clear "no" and the University ended its work with affirmative action after four years. The reaction was a clear protest from the office of the Equal Opportunity Ombudsman. According to an estimation about affirmative action published by the Ombudsman (Equal Opportunity Ombudsman 2000), the Court of Justice of the European Community did not forbid affirmative action. Quite the contrary the court opened new doors for it. Already in earlier cases it was explained that affirmative action is compatible with European law given the following conditions:

- that the underrepresented sex is not automatically promoted
- that all qualifications of all applicants are evaluated in an objective way and that attention is paid to the personal conditions of the applicants
- that there are definite criterions for the evaluation of qualifications
- that affirmative action and the aspired aim of equal opportunities are in parity
- That the differences in the qualifications between the applicants may not be too large. (Equal Opportunity Ombudsman 2000)

This discussion may go on, because different equal opportunity measures are in work. As already mentioned at all the institutions of higher education equal

opportunity measures are established. The discussion about affirmative action may have consequences for these programs and the situation of women in higher education. In addition that, new programs that will support women in higher education are planned. In one of the latest government bills the need of new research school even in the humanities and social science is announced. This could have positive effects on female doctoral students, because the percentage of women in humanities and social sciences is higher than in some of the other subjects.

As already mentioned, the Swedish government pays strong attention to questions of equal opportunities in higher education. Both the Tham-decree (see above) or the emphasis that is laid on the necessity to increase the number of female research associates may here be named as example. With the strong emphasis on gender equality in Swedish national policy in mind and thinking about institutions like the Equal Opportunity Committees at universities and university colleges or the Equal Opportunity Ombudsman, one might assume that women's situation and career perspectives in higher education are excellent. But a closer look at statistics shows a more differentiated picture. Today 40 per cent of doctoral students with employment are women, but only 22 per cent of the senior lecturers and 12 per cent of the professors.

Figure 4: Percentages of Women in different stages on the Career Ladder

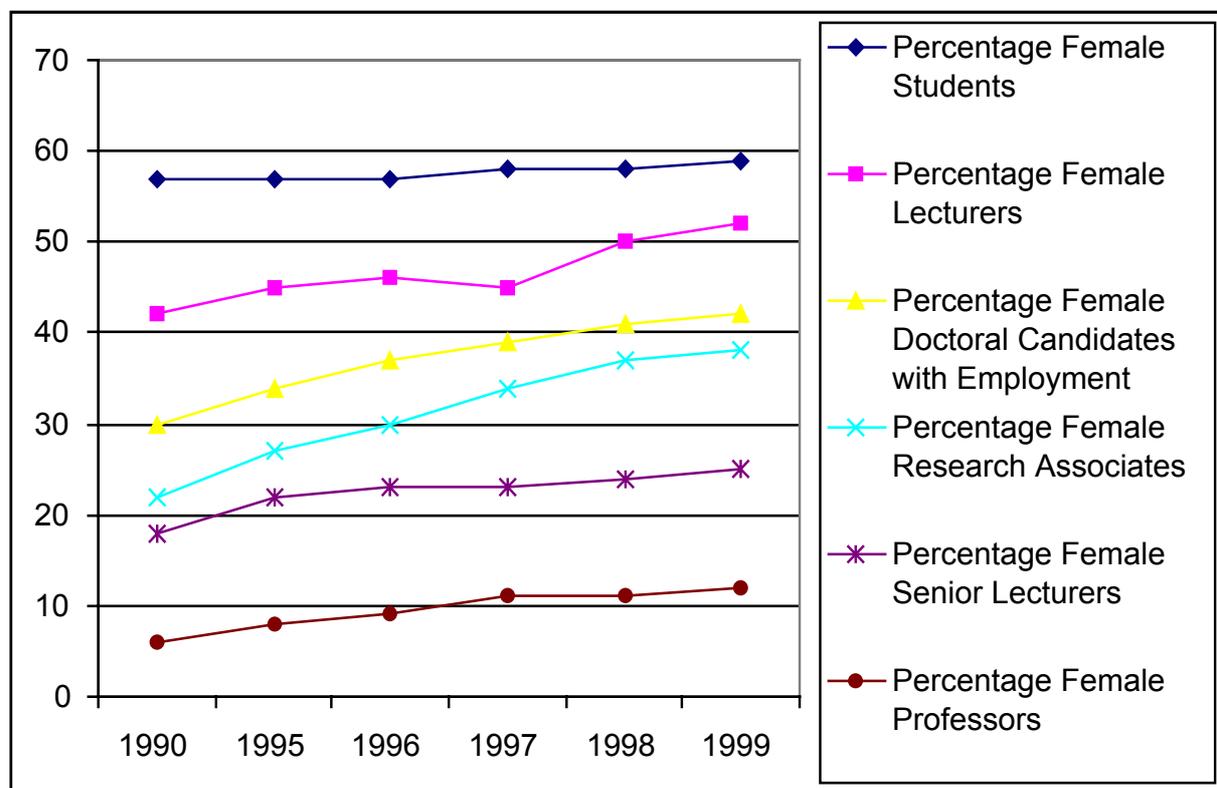


Figure 4 shows a distinct increase of women among lecturers, doctoral candidates with employment and research associates. Even the percentage of women among senior lecturers and professors grew in the latest years, but the increase of women at higher stages on the career ladder seems to be slower. Why?

First one has to think about the time period that is needed in order to reach top positions on the career ladder. The growing number of female research associates and doctoral candidates with employment may show first results in the top of the academic career ladder in about ten years. But this assumes that the effect of more women in higher education will not be slowed by better chances for men to advance on the career ladder.

In 1997 a study about research funding by the Swedish Medical Research Council (MFR) showed, that female applicants have to be about 2,2 times more productive than their male competitors to get financial support. (Wennerås / Wold 1997) This study became a "turning point in gender policy" because "(i)t strongly supported the view that the 'absence' or under-representation of women within research and the difficulties they face in their careers are due to discriminatory structures operating within higher education institutions and not due to the women themselves." (Asklings 2001:173)

This leads us to a second possible explanation for the slower increase in women's share of professorships and senior lecturers: To state that there are structures in academia that limit women's chances to advance – which means to state that women are less successful not because they are less qualified or ambitious, but because they are women – is an attack against the integrity of academia. Higher education, research, the academia itself claimed always to be obliged to nothing but quality and objectivity. To say, that women have not the same chances as men means to question this picture of objectivity. That is why equal opportunity measures are met by and even produce opposition. They are in fact manifestations of the above statement that structures in academia limit women's chances to advance. And it is very likely that this opposition will grow stronger the more these measures are focused on top rank positions. The assumption for this hypothesis is that top rank positions such as professorships are endowed with more power than lower positions and thus are more attractive.

A third explanation for the gap between the middle and the top rank positions on the career ladder might be the labour market outside the academy. Sweden's unemployment rate has been decreasing the last three years and higher education might lose its attractiveness. Today we find a quite strange situation in Sweden: On the one hand the system of higher education is still engaged in a process of enlargement. The institutions of higher education are prepared to educate more and more students. But on the other hand the number of applications for study-programmes is decreasing. In the year 2000 about 110.000 people applied for a place at a university or University College, this is a

decrease of about 9 per cent compared to the year 1999. (Statistics Sweden 2001) And this trend is not new.¹²

It is hypothetically possible to explain the higher percentage of women among doctoral students with employment and among research associates in relationship to the labour market. If men chose a career outside the academy, because it is more attractive and prestigious, women can more easily advance on the career ladder, because of a lack of male competitors. At a higher level on the academic career ladder it is more difficult to switch to the labour market outside the academy. A Senior Lecturer or Professor has invested too much time and energy and might even be overqualified in certain sections of the labour market. In these cases it is more rational to stay in the academy. Moreover, a professor has already reached the top rank position on the academic career ladder and has here the possibility to work occasionally as an expert for companies or committees of the government. Under these circumstances it is not attractive for her or him to look for a position outside the academy. The risk of losing income, security and status would be too high. This can explain the rather stable percentages and the slower increase of female Senior Lecturers and Professors.

But still one question is left: When men tend to choose the labour market instead of an academic career, why do women choose to stay in the (less prestigious) academy? Why do women not tend to choose careers outside the academy? One answer is that they have not the same chances to advance there as men have. And here one question still remains important: Why have women not the same career chances as men? We might explain the ups and downs in the percentage of women at several posts by looking at the labour market. But the mechanisms that put women in the worse position still remain uncovered.

¹² It has been debated in Sweden through the 90's and the period of legal reform of higher education, that the governments intention was to lower rates of unemployment by increasing the number of years in education before people entered the labour market.

Summary and Discussion

The Swedish system of higher education - as we find it today - was shaped by four main-reforms. The reform in 1977 built a single system of higher education characterised by strong national planning, common entry requirements for students and common staffing conditions for all institutions of higher education. In reality this reform established a "hidden binary system". By law the conditions for all institutions of higher education were equal, but the tasks for the institutions were clearly divided: Universities were responsible for research and university colleges for the undergraduate training. The Higher Education Act in 1993 removed the reins of national planning in higher education and gave more responsibility and independence to the institutions of higher education. Five years later the governing boards of institutions of higher education were reformed.¹³ This implied a stronger emphasis on marketing and management strategies within the decision-making processes in higher education institutions. Finally in 1999 new regulations for the appointment of academic staff were enforced. The former two careers ladders – one for the research career and one for a teaching career in higher education – were combined into one single career ladder.

In summary one has to say, that the system of higher education underwent fundamental changes during the last thirty years. The emphasis shifted from national planning toward more independence and self-responsibility for the institutions. The former collegial structures in decision-making bodies in higher education were transformed into more management-like structures. Even old career patterns in academia were broken up by the latest reform. The reforms brought some important changes – but certain patterns are untouched:

1. The persistence of the "hidden binary system": The tasks of universities and university colleges are still clearly distinguished. Universities do research and provide post-graduate education, university colleges do not. This implies also two career paths. University colleges hardly appoint any professors. To start an academic career at a university college might involve further difficulties along the career path. Firstly because there are hardly any possibilities to do research and to build up an academic profile. Secondly because it might be more difficult to compete for a post against applicants that earlier were employed at a university – especially if the announced post is one at a university.
2. The persistence of sex-specific divisions: Women and men still have their "places" in higher education. Women dominate typical "female" disciplines like education, health-related sciences or humanities. Men are stronger represented in disciplines like technology or agriculture. One has even to

¹³ Between 1991 and 1994 Sweden had a conservative government. In 1994 the social democrats regained power and tried to regain their power over universities by appointing members of the governing boards.

notice that the "female" disciplines are typical fields for the university colleges. When it comes to academic posts we find a higher percentage of women in posts with more teaching commitments. In contrast it seems to be harder for women to get a position with more research commitments.¹⁴

These two points show patterns of an important dilemma for some of the female students. The length of higher education has increased in the latest years, hence more exams award the general competence for post-graduate studies. Even the percentage of women among students that finish their studies with 120 and more credit points has increased. But most of the fields with a high percentage of female students miss strong links to the faculties or to the academic tradition. Here the "hidden binary system" works against women, as the "typical female subjects" are more strongly represented in university colleges. The connection between research and undergraduate education is poorly developed. The ideal of the lecturer who is also doing research and the professor who also teaches seems for most students more an idea than reality. A second dilemma is the difference between the general and the special competence for post-graduate studies. Sometimes the general competence is not enough to start post-graduate studies, and then a time of further studies is demanded in order to obtain the special competence. This is the case for many of the students with an exam for a teaching profession. If they wish to start post-graduate studies, they need a half year of further studies. (Riis/Lindberg 1996:20) Thinking about the studentship as a cohort-group for academic posts, one has to conclude, that the real cohort-group is smaller than the number of students in higher education. Certain parts of the studentship – mainly dominated by women – have only limited access to research and post-graduate education.

But what did the reforms bring to women in Swedish higher education? One has to be aware, that it might be too early to make any conclusions. What results the promotion-reform will bring, is not possible to say today. One could assume that a more flexible structure would open new doors for women. The new promotion system could make it easier for women to advance on the academic career ladder. Mainly this is true because the new promotion system revalues teaching commitments, this enables "reserves of talent" to use the new system to create an academic career. A first study points to a positive trend (National Agency for Higher Education 2001). Even a system of self-responsible institutions could promote women's situation. As the institutions can act more independently now, it should be easier for them to respond to women's situation

¹⁴ The post of a lecturer and a doctoral candidate with employment are both on the same level on the academic career ladder. Both have teaching commitments and both are supposed to work on a PhD. But the teaching load is bigger for the lecturer, which means, that the doctoral candidate has the better starting-position for an academic career. 1999 52 per cent of all lecturers were women. Among the doctoral candidates we find only 42 per cent women.

at various institutions and faculties. Equal opportunity measures could be more effective.

But on the other hand set stable patterns as described above may limit the new possibilities for women. The limited access to postgraduate education¹⁵, problems in getting research grants (Nyberg 1993) or different valuation of male and female qualification remain stable columns supporting the invisible glass ceiling.

¹⁵ Because of the hidden binary structure in higher education and the sexspecific divisions among fields of study and academic posts.

Abbreviations

HSFR	Research Council for Humanities and Social Sciences (<i>Humanistisk-samhällsvetenskapliga forskningsrådet</i>)
HSV	National Agency for Higher Education (<i>Högskoleverket</i>)
KK	Foundation for the Development of Knowledge and Competence
KVA	Royal Scientific Academy
MFR	Research Council for Medical Sciences (<i>Medicinska forskningsrådet</i>)
Mistra	Foundation for Environmental-strategic Research
NFR	Research Council for Natural Sciences (<i>Naturvetenskapliga forskningsrådet</i>)
RJ	Jubilee Foundation of the National Bank (<i>Riksbankens Jubileumsfond</i>)
SEK	Swedish Crowns (<i>Svenska Kronor</i>) 1 Euro = 9,01 SEK; 1 SEK = 0,11 Euro
SSF	Foundation for Strategic Research
STINT	Foundation for Internationalisation of Higher Education and Research
TFR	Research Council for Technical Sciences (<i>Teknikvetenskapliga forskningsrådet</i>)
Vårdal	Foundation for Care / Nursing and Allergy Research

Glossary

Agency for Service in Higher Education (*Verket för högskoleservice*)

National body responsible for administration of the admission of students to certain study programmes by order of universities or university colleges.

Appointments Board (*Tjänsteförelagsnämnd*)

Committee, consists of members of the faculty board, which has to assess all incoming application for academic posts.

Bachelor's degree (*Kandidatexamen*)

Degree awarded after studies that correspond to an amount of 120 credit points, which means three years of full time studies.

Central Board for Study Support (*Centrala Studiestödsnämnd*)

National body responsible for the organisation and distribution of study support.

Committee for Research (*Forskningsberedning*)

Advisory group for the Swedish government in questions of research policy.

Council for Planning and Co-ordination of Research (*Forskningsrådsnämnd*)

Body responsible for financing parts of interdisciplinary research.

Diploma (*Högskoleexamen*)

Degree awarded after studies that correspond to an amount of 80 credit points, which means two years of full time studies.

Doctoral Candidate with Employment (*Doktorandtjänst*)

Doctoral Candidate who takes part in a research programme and is employed at an institution of higher education. Usually 20 per cent teaching commitments, the greater amount of time is for research and writing the PhD.

Equal Opportunity Ombudsman (*Jämställdhetsombudsman*)

National body responsible for controlling and ensuring of the realisation of the gender policy of the Swedish government.

Faculty Board (*Fakultetsnämnd*)

Subordinated to the governing board, this body is responsible for the research within the faculties and is in some cases even concerned with education.

Governing Board (*Styrelse*)

Highest body in every institution of higher education. It is responsible for the organisation of the university or university college, the distribution of resources, admission decrees and questions of employment at the institution of higher education.

Higher Education (*Högre utbildning*)

All education that is provided at universities and university colleges.

Higher Education Act (*Högskolelag*)

Law regulating the system of higher education in Sweden.

Lecturer (*Adjunkt*)

Academic post with mostly teaching commitments. Usually a lecturer works at her or his PhD.

Master's degree (*Magisterexamen*)

Degree awarded after studies that correspond to an amount of 160 credit points, which means four years of full time studies.

Master of Arts (*Licentiat*)

Degree of post-graduate education which is awarded after two years of research training.

National Agency for Higher Education (*Högskoleverket, HSV*)

National body responsible for supervision of universities and university colleges activities, evaluation and development of higher education in Sweden.

Ordinance for Higher Education (*Högskoleförordningen*)

Supplement to the Higher Education Act.

Professor (*Professor*)

Top rank position in the system of higher education. Post which is mostly concerned with research. Since the promotion reform in 1999 Sweden has now three categories of professors: professor, promotive professor and auxiliary professor.

Research Associate (*Forskarassistenter*)

Time-limited (four years) academic post with only research commitments. Doctorate is required.

Research Council (*Forskningsråd*)

National body that deals with the distribution of research grants.

Research Schools (*Forskarskolor*)

No clear definition. These schools, established by the institutions of higher education try to provide a better supervision, possibility to interdisciplinary work and networks to their post-graduate students.

Senior lecturer (*Högskolelektor*)

Academic post with both teaching and research commitments. Doctorate is required.

Student (*Student*)

The term "student" includes all people enrolled at institutions of higher education.

University (*Universitet*)

Institution of higher education, that provides both undergraduate education and post-graduate education. In Sweden universities are mostly responsible for the research activities.

University College (*Högskola*)

Institutions of higher education that provide undergraduate education. University colleges usually don't do research and are not allowed to offer doctoral training. Exceptions are the university colleges in Karlskrona / Ronneby, Malmö and Kalmar.

Additional Tables

Enrolled students 1993-1999

	1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999
Sweden	256379	269875	285773	301090	305420	310350
Programs for professional degrees	112272	111493	115460	121560	123837	126584
Humanities, arts, religion and theology	1332	1316	1244	1156	1117	1205
Law, social and behavioral science	11324	11690	12099	12477	12441	12666
Teacher training	34461	33959	33152	33739	33337	33159
Natural Science	37349	37382	40604	1180	1128	1100
Technology				43688	46754	49540
Agriculture and forestry	1823	1653	1975	1963	1798	1784
Medical science and odontology	7343	7328	7162	7216	7002	6907
Health-related science	17055	16517	17487	18310	18409	18306
Fine and applied arts	1939	1938	1994	2091	2094	2194
Programs for general degrees	144107	158322	170313	179530	181583	183766
Humanities, arts, religion and theology	49337	52354	58026	60641	56672	55924
Law, social and behavioral science	78708	86558	91991	95689	95785	98218
Natural Science	21073	22989	25235	28124	30223	31197
Technology	9589	10522	11397	13614	14724	15806
Medical science and odontology	1376	2091	2977	3111	4759	5327
Health-related science	9251	10834	12254	12500	14389	14485
Fine and applied arts	1595	2177	2667	3150	3444	3887
Other subjects	1945	2790	2062	2621	2572	3273

Source: Statistics Sweden Statistisk Årsbok 1997-2001

Percentage of female students among all enrolled students broken by field and professional/general degrees 1993-1999

	PERCENTAGE OF WOMEN					
	1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999
Sweden	56	57	57	58	58	59
Programs for professional degrees	56	55	55	55	55	55
Humanities, arts, religion and theology	54	56	54	55	58	60
Law , social and behavioral science	64	64	64	64	65	67
Teacher training	78		75	75	75	75
Natural Science	21	21	22	80	76	76
Technology				22	24	25
Agriculture and forestry	43	45	48	51	55	58
Medical science and odontology	50	52	53	53	54	55
Health-related science	87	87	87	87	87	87
Fine and applied arts	54	53	53	52	52	54
Programs for general degrees	57	58	59	60	61	61
Humanities, arts, religion and theology	62	63	63	64	64	65
Law , social and behavioral science	54	55	55	56	57	59
Natural Science	38	40	42	45	48	48
Technology	24	25	29	32	34	37
Medical science and odontology	68	72	73	72	76	76
Health-related science	88	89	89	90	90	90
Fine and applied arts	63	58	60	60	63	62
Other subjects	75	75	75	74	73	72

Source: Statistics Sweden Statistisk Årsbok 1997-2001

Examinations 1993-1998, broken by field and sex

		1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999
Total number of examinations	Total number	33979	34212	32226	35299	35170	36454
	Women in %	63	59	58	60	60	60
Humanities and theology	Total number	1480	1809	1974	2326	2441	2575
	Women in %	66	66	65	67	67	68
Law, social and behavioral science	Total number	8269	9299	9379	9463	9617	9718
	Women in %	56	55	55	56	57	56
Teacher training	Total number	8694	8596	6696	7828	7241	7229
	Women in %	82	80	77	79	78	80
Natural science	Total number	1278	1530	1486	1668	1688	1844
	Women in %	60	60	61	62	60	58
Technology	Total number	5608	6664	6395	6555	6539	7237
	Women in %	18	19	19	20	20	23
Agriculture and forestry	Total number	429	365	359	395	320	228
	Women in %	23	27	36	38	39	50
Medical science and odontology	Total number	1020	1041	1111	1341	1289	1415
	Women in %	52	51	53	54	55	55
Health-related science	Total number	6761	4407	4380	5149	5575	5690
	Women in %	88	86	89	89	88	88
Fine and applied arts	Total number	370	402	426	554	449	479
	Women in %	55	53	60	56	59	59
Others	Total number	70	99	20	20	11	39
	Women in %	66	61	40	35	55	49

Source: Statistics Sweden (2000) utbildningsstatistisk årsbok 2000 – Tabeller

Doctoral degrees 1993-1998 broken by sex and faculties

		1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998
All faculties	Total	1410	1522	1598	1722	1883
	Women	432	510	508	574	602
Humanities	Total	113	93	113	115	143
	Women	57	34	47	54	72
Theology	Total	16	18	18	9	22
	Women	3	3	3	2	4
Law	Total	5	11	10	16	13
	Women	1	3	4	8	3
Social science	Total	184	181	169	191	296
	Women	56	64	61	73	94
Medical science	Total	441	452	480	515	493
	Women	151	181	181	187	198
Odontology	Total	20	31	26	19	24
	Women	10	17	11	8	10
Pharmacy	Total	12	14	20	16	19
	Women	5	5	10	8	11
Mathematical-scientific field	Total	171	213	209	204	247
	Women	48	75	59	57	69
Technology	Total	285	304	349	426	388
	Women	50	50	60	99	70
Technical-scientific field	Total	89	88	95	97	92
	Women	22	24	22	25	21
Philosophy	Total	18	22	19	18	29
	Women	9	15	12	11	12
Agriculture / Landscape gardening	Total	29	47	46	52	56
	Women	13	17	21	29	24
Forestry	Total	16	30	22	30	42
	Women	3	10	7	7	7
Veterinary medicin	Total	11	18	22	14	19
	Women	4	12	10	6	7

Source: Statistics Sweden (1999) Utbildningsstatistisk årsbok 1999

Licentiate-degrees 1993-1998, broken by sex and faculties

		1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998
All faculties	Total	681	706	821	845	853
	Women	177	193	244	281	276
Humanities	Total	25	39	22	32	26
	Women	5	14	11	14	17
Theology	Total	8	15	3	17	13
	Women	1	2	-	6	4
Law	Total	5	1	3	-	3
	Women	-	-	-	-	1
Social science	Total	79	104	127	100	96
	Women	33	35	51	44	38
Medical science	Total	50	44	57	76	61
	Women	32	22	31	45	44
Odontology	Total	5	15	6	11	9
	Women	3	7	3	7	5
Pharmacy	Total	3	6	-	5	-
	Women	3	4	-	3	-
Mathematical-scientific field	Total	81	57	98	100	111
	Women	26	17	33	35	44
Technology	Total	363	331	416	425	449
	Women	54	64	87	93	97
Technical-scientific field	Total	47	53	55	50	48
	Women	16	12	16	21	11
Philosophy	Total	-	11	9	6	15
	Women	-	8	5	3	3
Agriculture / Landscape gardening	Total	8	18	11	13	11
	Women	2	7	4	6	6
Forestry	Total	6	11	10	7	7
	Women	1	1	2	3	2
Veterinary medicin	Total	1	1	4	3	4
	Women	1	-	1	1	4

Source: Statistics Sweden (1999) Utbildningsstatistisk årsbok 1999 - Tabeller

Academic staff by post and sex

YEAR	LECTURER		RESEARCH ASSOCIATE		SENIOR LECTURER		PROFESSOR	
	Total number	Percentage Women	Total number	Percentage Women	Total number	Percentage Women	Total number	Percentage Women
1990	4838	42	913	22	4201	18	1985	6
1991	5148	42	910	23	4463	19	2025	6
1992	5685	42	1017	25	4700	20	2061	6
1993	5912	42	1119	24	4980	21	2094	7
1994	6089	42	1141	26	5170	22	2187	7
1995	6282	45	1030	27	5325	22	2177	8
1996	6465	46	1177	30	5629	23	2264	9
1997	6333	45	1167	34	5515	23	2529	11
1998	7059	50	1226	37	6042	24	2390	11
1999	7634	52	1170	38	6042	25	2671	12
2000	8029	52	1102	38	5837	27	3254	13

Source: Statistics Sweden (www.scb.se/utbildning), percentages after own calculations

**Academic staff (FTE), by fields of science, gender and type of employment
(Institutions of higher education in non-state ownership are not included)
year 2000**

		RESEARCH ASSOCIATE	LECTURER	SENIOR LECTURER	PROFESSOR
Total	Total	1057,1	6853,3	5431,7	2981,5
	Women	395,7	3567,1	1454,0	390,1
Humanities and theology	Total	91,5	247,2	487,7	253,8
	Women	48,3	144,2	200,8	64,8
Fine and applied arts	Total	-	162,8	36,1	25,0
	Women	-	53,6	3,8	3,5
Law	Total	2,0	57,2	63,4	50,0
	Women	2,0	31,8	17,0	9,7
Social science	Total	75,0	644,8	756,5	328,7
	Women	34,9	307,5	208,6	46,5
Medical science	Total	199,3	737,5	521,8	679,6
	Women	93,8	617,1	215,8	83,3
Odontology	Total	10,5	48,1	45,7	36,7
	Women	4,5	27,1	14,7	4,0
Pharmacy	Total	1,0	7,5	27,9	18,4
	Women	1,0	7,5	9,0	2,0
Natural science	Total	257,7	235,3	714,9	515,9
	Women	78,7	70,9	120,0	47,5
Technology	Total	286,3	647,9	970,8	577,6
	Women	78,0	177,2	105,3	34,9
Agriculture	Total	35,1	79,9	57,8	82,2
	Women	13,5	34,8	17,0	18,5
Forestry	Total	27,6	28,4	22,9	60,5
	Women	6,0	4,7	1,0	7,0
Veterinary medicin	Total	13,3	85,2	18,8	29,0
	Women	7,0	56,7	9,5	4,0
Intedisciplinary research (temaforskning)	Total	21,3	54,8	21,8	32,3
	Women	13,0	34,1	64,8	8,3
Teacher training	Total	3,8	648,0	648,0	33,7
	Women	3,5	414,9	414,9	10,2
Central Administration	Total	-	74,8	10,9	7,5
	Women	-	33,7	1,9	1,0
University	Total	32,9	2949,7	1392,6	202,8

colleges	Women	11,5	1492,2	401,3	35,8
University colleges of fine and applied arts	Total	-	144,2	57,8	41,7
	Women	-	59,0	24,1	8,1
Research institutions	Total	-		4,0	6,0
	Women	-		1,0	1,0

Source: Statistics Sweden (2001) Universitet och högskolor - Personal vid universitet och högskolor 2000. UF 23 SM 0101

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Books and Articles

Bauer, Marianne / Askling, Berit / Gerard Marton, Susan / Marton, Ference (1999) Transforming Universities. Changing Patterns of Governance, Structure and Learning in Swedish Higher Education. Higher Education Policy Series 48. London: Jessica Kingsley Publishers.

This book focuses on the development of the Swedish system of higher education during the 1990's. According to the authors, higher education faced "an environment of new patterns of social demands and accelerating international competition" (p. 8) The reform in higher education, that was enforced during the investigated period, should answer to these new patterns and demands. The authors elaborate the implications of reforms in higher education on the state-level, the institutional level and the individual level. Further they discuss the relations between these levels. Also in **Askling, Berit (2001)** Higher Education and Academic Staff in a Period of Policy and System Change. Higher Education 41, pp. 157-181. a broader overview of the developments in higher education even in the late 90's is given. For further reading see even: **Kim, Lillemor (1998)** Val och urval till högre utbildning. En studie baserad på erfarenheterna av 1977 års tillträdesreform. Uppsala: Uppsala University. This dissertation focusses on choice and selection processes in recruitment to higher education since the reform in 1977. Additionally a reading of **Lundmark, Annika / Edvardsson, Helena / Strömberg, Laine (1998)** Lika men ändå olika – vilka skillnader finns mellan kvinnliga och manliga studenters uppfattning om studierna? Uppsala: Uppsala University. is to recommend. Here attention is given to the study experiences of male and female students. **National Agency for Higher Education (2000)** Att leda universitet och högskolor. En uppföljning och analys av styrelserefomen 1998. Stockholm: Högskoleverkets rapportserie 2000:15R. This is a first investigation of the results of the reform in 1998. Both chairpersons and rectors were asked about their experiences with the implementation of the reform and how they see the recent situation. Criticism is expressed about the role of the Ministry of Education and Research during the implementation of the new organisational structure. Chairpersons and rectors mostly state that their cooperation works well. But at the same time there are different opinions about how the interaction will work in cases of conflict. **Snick, Anne / De Munter, Agnes (1999)** Women in educational Policy-Making. A qualitative and quantitative Analysis of the Situation in the E.U. Studia Paedagogica 24. Leuven: Leuven University Press. This is a study on

women in decision making bodies / processes of the countries in the European Union. For a collection of articles that discuss swedish policy in higher education see **Fridlund, Mats / Sandström, Ulf (red.) (2000)** Universitetets värden. Bidrag till den forskningspolitiska debatten. Stockholm: SNS Förlag.

Dahllöf, Urban / Selander, Staffan (ed.) (1994) New Universities and Regional Context. Papers from an International Seminar held at Sundsvall, Sweden 14-18 June, 1992. Acta Universitatis Uppsaliensis. Uppsala Studies in Education 56. Uppsala: Department of Education, Uppsala University.

The newly founded university colleges and universities such as their influence on a regions development is the focus of this book. The phenomenon of new institutions of higher education – which often are located in the periphery instead of the bis centres of industry or knowledge, like capitals or old university towns – is elaborated in a swedish, a nordic and an international context. Special attention is given to the problem of keeping a balance between centre and periphery and the impulses that these new institutions can give to the regional development. For the swedish case this focus is of special interest, because some of the university colleges founded during the 70's and 80's were transformed into universities in 1999/2000. For further reading see: **Dahllöf, Urban / Selander, Staffan (ed.) (1996)** Expanding Colleges and New Universities. Selected Case Studies from Non-metropolitan Areas in Australia, Scotland and Scandinavia. Papers from an International Development Seminar held at Östersund/Trillevallen, Sweden, 15-19 March, arranged by Mid-Sweden University College. Acta Universitatis Uppsaliensis. Uppsala Studies in Education 66. Uppsala: Department of Education, Uppsala University.

Lindgren, Ulla (2000) En empirisk studie av mentorskap inom högre utbildning i Sverige: innebörd, utformning och effekter. Didactica Umensis Nr.3. Umeå: Umeå University.

The author distinguishes between tutoring, peer groups and supervision on the one hand and mentorship / mentoring on the other hand. Even all these concepts seem to have the same meaning, it is shown, that menoring focuses more on a process of personal development and ripeness while the other concepts are more focused on a single topic and follow a teaching concept. There exist both spontaneous (informal) and organised (formal) mentorships. Though the former is more common between men. The author discusses why mentorship became a hot issue in the swedish debate on higher education and presents a study on a mentorship project at the

University of Umeå. Twelve female PhD students took part in this project and twelve people with manager positions on both industry and public sector participated as mentors. In interviews with the students and the mentors the effect of this project was elaborated. As one result of the project more confidence and gained self-esteem was pointed out by the PhD students. See even: **Bondestam, Fredrik (1996)** Mentorn – en hjälpande hand för kvinnor i karriären? Uppsala: Psykologiska institutionen. Uppsala universitet.

Mark, Eva (2000) Jämställdhetsarbete. Teorier om praktiker. Jämställdhetskommitténs skriftserie 1. Göteborgs universitet.

The author gives a short introduction into the frames and motivations of gender policy. It is shown, how the Swedish government motivates its policy and legislation and the underlying premises such as different interpretations are discussed. With practical experiences from the work with equal opportunity measures the author tries to sketch "theories on practise". This means theories that can motivate and encourage strategies and measures to give the underrepresented sex more scope. Additionally one of the latest reports of **National Agency for Higher Education (2000)** Goda exempel hur universitet och högskolor kan arbeta med jämställdhet, studentinflytande samt social och etnisk mångfald. Stockholm: Högskoleverkets rapportserie 2000: 9R. is to recommend. Here plans for equality, recruitment such as gender perspectives in education are discussed. For several case studies see: **Andersson, Lars (1998)** Attityder till jämställdhet på högskolan i Växjö. Jämställdhetskommittén 1998:1. Högskolan i Växjö. **Bondestam, Fredrik (1999)** Fjärre tjänster, fler kvinnor? En undersökning av Uppsala universitets försöksverksamhet med positiv särbehandling. Uppsala: Uppsala universitet. **Bondestam, Fredrik (2000)** Från policy till praktik: om implementeringen av jämställdhet och det lokala jämställdhetsarbetets villkor. Uppsala: Uppsala universitet. **Bosseldal, Ingrid / Esseveld, Johanne (1998)** Bland forskare och teoretiserande män. Jämställdhet och genus vid Sociologiska institutionen i Lund. Lund: Department of Sociology. Lund University. Research Report 1998:8. **Bosseldal, Ingrid / Hansson, Carl (1998)** Kvinnor i mansrum. Jämställdhet och genus vid Sociologiska institutionen i Umeå. Lund: Department of Sociology. Lund University. Research Report 1998:9. **Bosseldal, Ingrid / Hellum, Merete (1998)** Ett kvinnligt genombrott utan feminism? Jämställdhet och genus vid Sociologiska institutionen i Göteborg. Lund: Department of Sociology. Lund University. Research Report 1998:3. **Bosseldal, Ingrid / Johansson, Stina (1998)** Den frånvarande genusteorien. Jämställdhet och genus vid Sociologiska

institutionen i Linköping. Lund: Department of Sociology. Lund University. Research Report 1998:13. **Bosseldal, Ingrid / Magdalenic, Sanja (1998)** Det osynliga könet. Jämställdhet och genus vid Sociologiska institutionen i Stockholm. Lund: Department of Sociology. Lund University. Research Report 1998:12.

National Agency for Higher Education (2000) Forskarskolor – ett regeringsuppdrag. Stockholm: Högskoleverkets rapportserie 2000: 2R.

This report provides information about the development of Swedish research schools and discusses advantages and disadvantages of these schools. Even the experiences of the only research school for women at the Luleå University of Technology are shortly presented. A more detailed analysis of this research school is to be found in **Trojer, Lena (1999)** Kompetens för ledarskap inom forskningsorganisationer – en kvinnlig forskarskola för förändring vid teknisk fakultet. Luleå: Avdelningen Genus och teknik, Luleå tekniska universitet. For further discussion about postgraduate education and the disputation see: **Zetterblom, Göran (1994)** Forskarutbildning under 70- och 80-talet. Reform och resultat. Stockholm: Carlssons. **Björklund, Stefan (1991)** Forskningsanknytning genom disputation. Uppsala: Acta Universitatis Upsaliensis. Skrifter utgivna av Statsvetenskapliga föreningen i Uppsala, 112. **Björklund, Stefan (1996)** En författning för disputationen. Uppsala: Acta Universitatis Upsaliensis. Skrifter utgivna av Statsvetenskapliga föreningen i Uppsala, 124.

National Agency for Higher Education (2001) Karriär genom befördran och rekrytering – Delrapport. Stockholm: Högskoleverkets rapportserie 2001: 7 R.

This is a first evaluation of the promotion reform in 1999 where assumptions and outcomes of the reform are discussed. As a first result it is shown, that promotion and recruitment path in the average give the same outcome for women, 20% of the newly appointed professors were women. But a closer look at the disciplines shows differences: the promotion path seems to give better results for women in natural sciences and medical sciences, while women in social sciences and law studies have better chances on the recruitment path. In the report of **Riis, Ulla / Lindberg, Leif (1996)** Värdering av kvinnors respektive mäns meriter vid tjänstetillsättning inom universitet och högskolor. Utbildningsdepartementet Ds 1996: 14. Stockholm: Fritzes förlag. attention is given to the work of the appointment boards and how they value qualifications and merits of female and male applicants. Other publications concerned with women's career chances and hurdles are: **Nyberg, Anita**

(1993) Varför beviljas så få kvinnor forskningsbidrag? Stockholm: Forskningsnämnden. **Hanström, Maj-Britt (2000)** Kvinnor och män, lika möjligheter till forskning? Rapport från KTH's jämställdhetskommitté. Stockholm: Kungliga Tekniska Högskolan. **Hanström, Maj-Britt (1997)** Kvinnliga teknologi och filosofi doktorers karriärmönster: en jämförande studie mellan disputerade kvinnor från Kungliga Tekniska Högskolan och Stockholms universitet. Stockholm: Centrum för kvinnoforskning vid Stockholms universitet (i samarbete med) Forum för kvinnliga forskare och kvinnoforskare i Stockholm.

Rönholm, Tord (1999) Kunskapens kvinnor. Sekelskiftets studentkor i mötet med den manliga universitetsvärlden. Umeå: Department of Historical Studies, Umeå University.

This dissertation focuses on the first female students in Sweden under the period 1870 - 1914. The author pays certain attention to the gender order and gender construction at that time. The dissertation shows, that the gendered hierarchies and institutional obstacles that women in academia meet today are rooted in the gender structure that was created until the end of the 19th century. In order to get a picture of a broader historical context the reading of **Rothblatt, Sheldon / Wittrock, Björn (ed.) (1993)** The European and American university since 1800. Historical and sociological essays. Cambridge: Cambridge University Press. will be useful. A historical study about the relation between the state and the two oldest universities in Sweden, Uppsala and Lund, is written by **Blomqvist, Göran (1992)** Elefenbenstorn eller statsskepp? Stat, universitet och akademisk frihet i vardag och vision grån Agardh till Schück. Bibliotheca Historica Lundensis 71. Lund: Lund University Press.

Swedish Institute (1998) Fact Sheet 83lEp: Higher Education in Sweden. www.si.se

This fact sheet provides basic information about the Swedish system of higher education. The Swedish Institute provides such papers about several topics related to the Swedish society. These papers are to recommend as a first introductory reading. See further: **Swedish Institute (2000)** Fact Sheet 64qEm: Upper Secondary School and Adult Education in Sweden. and Fact Sheet 82nOhj: Equality between Women and Men. **Swedish Institute (2001)** Fact Sheet 39xEm: Compulsory School in Sweden.

Reports and Documents

Government Bill (1978/79:119) Om vissa frågor rörande forskning och forskarutbildning. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1981/82:106) Om forskning m.m. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1983/84:107) Om forskning. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1986/87:80) Om forskning. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1988/89:65) Om formerna för högskolepolitiken. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1989/90:90) Om forskning. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1992/93:170) Forskning för kunskap och framsteg. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1993/94:177) Utbildning och forskning: kvalitet och konkurrenskraft. Stockholm: Allmänna Förlaget / Fritzes.

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Government Bill (1994/1995:164) Jämställdhet. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1996/97:5) Forskning och samhälle. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1997/98:1) Budgetpropositionen för 1998. Utgiftsområde 15 Studiestöd, 16 Utbildning och universitetsforskning. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1998/99:94) Vissa forskningsfrågor. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1999/2000:10) Ett reformerat studiesstödssystem. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (1999/2000:81) Forskning för framtiden – en ny organisation för forskningsfinansiering. Stockholm: Allmänna Förlaget / Fritzes.

Government Bill (2000/2001:3) Forskning och förnyelse. Stockholm: Allmänna Förlaget / Fritzes.

Ministry of Education and Science (1994) Kartläggning och utvärdering av jämställdhetsprojekt inom universitet och högskolor. Utbildningsdepartementet Ds 1994: 130. Stockholm: Fritzes förlag.

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Ministry of Education and Science (2000) Faktablad U00.009: Det svenska forskningssystemet. www.utbildning.regeringen.se/pressinfo/faktablad.htm (15.10.2000)

National Agency for Higher Education (1996) Årsrapport för universitet och högskolor 1994 / 95. Stockholm: Högskoleverkets rapportserie 1996: 8 R.

National Agency for Higher Education (1996) Gender-inclusive Higher Education in Mathematics, Physics and Technology. Stockholm: Högskoleverkets skriftserie 1996: 5 S.

National Agency for Higher Education (1996) Kriterier för benämning universitet – En utredning. Stockholm: Högskoleverkets rapportserie 1996: 12 R.

National Agency for Higher Education (1996) Kvinnor och män i högskolan. Från gymnasium till forskarutbildning. Högskoleverkets rapportserie 1996: 13 R.

National Agency for Higher Education (1996) 1993 års högskolereform – Vad blev det av den? Sju vittnesmål efter tre år. Stockholm: Högskoleverkets skriftserie 1996: 6 S.

National Agency for Higher Education (1996) Rätt att inrätta professurer – Högskoleverkets prövning av Högskolan i Kalmar, Karlstad, Växjö, Örebro samt Mitthögskolan och Mälardalens högskola. Stockholm: Högskoleverkets rapportserie 1996: 24 R.

National Agency for Higher Education (1997) Årsrapport för universitet och högskolor 1995 / 96. Stockholm: Högskoleverkets rapportserie 1997: 17 R.

National Agency for Higher Education (1997) Grundläggande högskoleutbildning: Politik och planering eller den osynliga handen i full verksamhet. Stockholm: Högskoleverkets skriftserie 1997: 2 S.

National Agency for Higher Education (1997) Rätt att inrätta professurer – Högskoleverkets prövning av Högskolan i Halmstad, Högskolan i Karlskrona / Ronneby, Högskolan i Örebro, Idrottshögskolan samt Mitthögskolan. Stockholm: Högskoleverkets rapportserie 1997: 37 R.

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National Agency for Higher Education (1998) Costs of Study, Student Income and Study Behavior in Sweden. Stockholm: Högskoleverkets skriftserie 1998: 1 S.

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National Agency for Higher Education (1998) Recruiting Female Students to Higher Education in Mathematics, Physics and Technology. Stockholm: Högskoleverkets skriftserie 1998: 3 S.

National Agency for Higher Education (1998) The Current Swedish Model of University Governance – Background and Discription. Stockholm: Högskoleverkets skriftserie 1998: 10 S.

National Agency for Higher Education (1998) Women and men in higher education – from upper secondary school to postgraduate training 1986 / 87 – 1995 / 96. Stockholm: Högskoleverkets rapportserie 1998: 13 R.

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National Agency for Higher Education (2000) Sexuella trakasserier mot studenter – högskolornas åtgärder. Stockholm: Högskoleverkets rapportserie 2000: 17 R.

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Statens Offentliga Utredningar (SOU 1997:52) Forskningspolitik. Stockholm:Fritzes.

Statens Offentliga Utredningar (SOU 1977:63) Fortsatt högskoleutbildning - Forskarutbildning. Stockholm:Fritzes.

Statens Offentliga Utredningar (SOU 1993:3) Ersättning för kvalitet och effektivitet. Utformning av ett nytt resurstilldelningssystem för grundläggande högskoleutbildning. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1993:12) Vårdhögskolor - Kvalitet - Utveckling - Huvudmannaskap. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1993:102) Kvalitet och dynamik. Förslag från Resursberedningen rörande statsmakternas resurstilldelning till grundläggande högskoleutbildning samt forskning och forskarutbildning. Stockholm: Fritzes.

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Statens Offentliga Utredningar (SOU 1996:21) Reform och förändring. Organisation och verksamhet vid universitet och högskolor efter 1993 års universitets- och högskolereform. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1996:29) Forskning och pengar. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1996:36) Högskola i Malmö. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1996:56) Hälften vore nog - om kvinnor och män på 90-talets arbetsmarknad. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1996:90) Sammanhållet studiestöd. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1996:166) Lärare för högskola i utveckling. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 1999:135) Stöd till Örebro universitet och Södertörns högskola. Stockholm: Fritzes.

Statens Offentliga Utredningar (SOU 2000:82) Högskolans styrning. Stockholm: Fritzes.

Laws and Statutes

Higher Education Act (SFS 1992:1434)
Ordinance for Higher Education (SFS 1993:100)
Equal Opportunity Act (1979:1118)
Equal Opportunity Act (1991:433)

Journals

European Journal of Education
European Journal of Political Research
Gender and Education
Higher Education
Higher Education Management
Higher Education Policy
Higher Education Quarterly
International Journal of Institutional Management in Higher Education
Public Administration
Quality in Higher Education
Policy and Politics
Review of Educational Research
Scandinavian Journal of Educational Research
Studies in Higher Education
Studies of Higher Education and Research
Tertiary Education and Management
Universitetsläraren

Useful Links

FEMDOK – Database about interdisciplinary research about women, gender and equal opportunities: Equal Opportunity Ombudsman

KVINNSAM – Database at the university in Gothenburg, Library for women- and gender studies: www.libris.kb.se/kvinnsam.html

National Agency for Higher Education: www.hsv.se/

National Office for Gender Studies (*Nationella sekretariatet för genusforskning*) at the Gothenburg University: www.genus.gu.se

Q-BIBLIOTEKET – Nordic virtual library about women- and gender studies: www.nikk.uio.no/qbiblioteket/index.html

Q-Web Sweden – network and resourcebase for organisations and scientists who work about womens health and equal opportunities: www.qweb.kvinnoforum.se

Swedish Institute: www.si.se/

Webpages of Centres for Women's Studies and Gender Research

Gothenburg: The Swedish Secretariat for Gender Research: www.genus.gu.se

The Women's History Collection at the Gothenburgh University: www.ub.gu.se/kvinny/hem.html

Department for Gender Studies: www.wmst.gu.se

Linköping: Centre for Women's Studies: www.liu.se/org/kvinnoforum/

Lund: The Centre for Women's Studies: www.kvf.lu.se

Luleå: Division of gender and Technology: www.luth.se/depts.arb/genus_tekn/

Stockholm: Center for Women's Studies: www.kvinfo.su.se/

Umeå: Centre for Women's Studies: www.umu.se/kvf/index.html

Örebro: Forum for Women's Studies: www.oru.se/org/inst/sam/kvinno