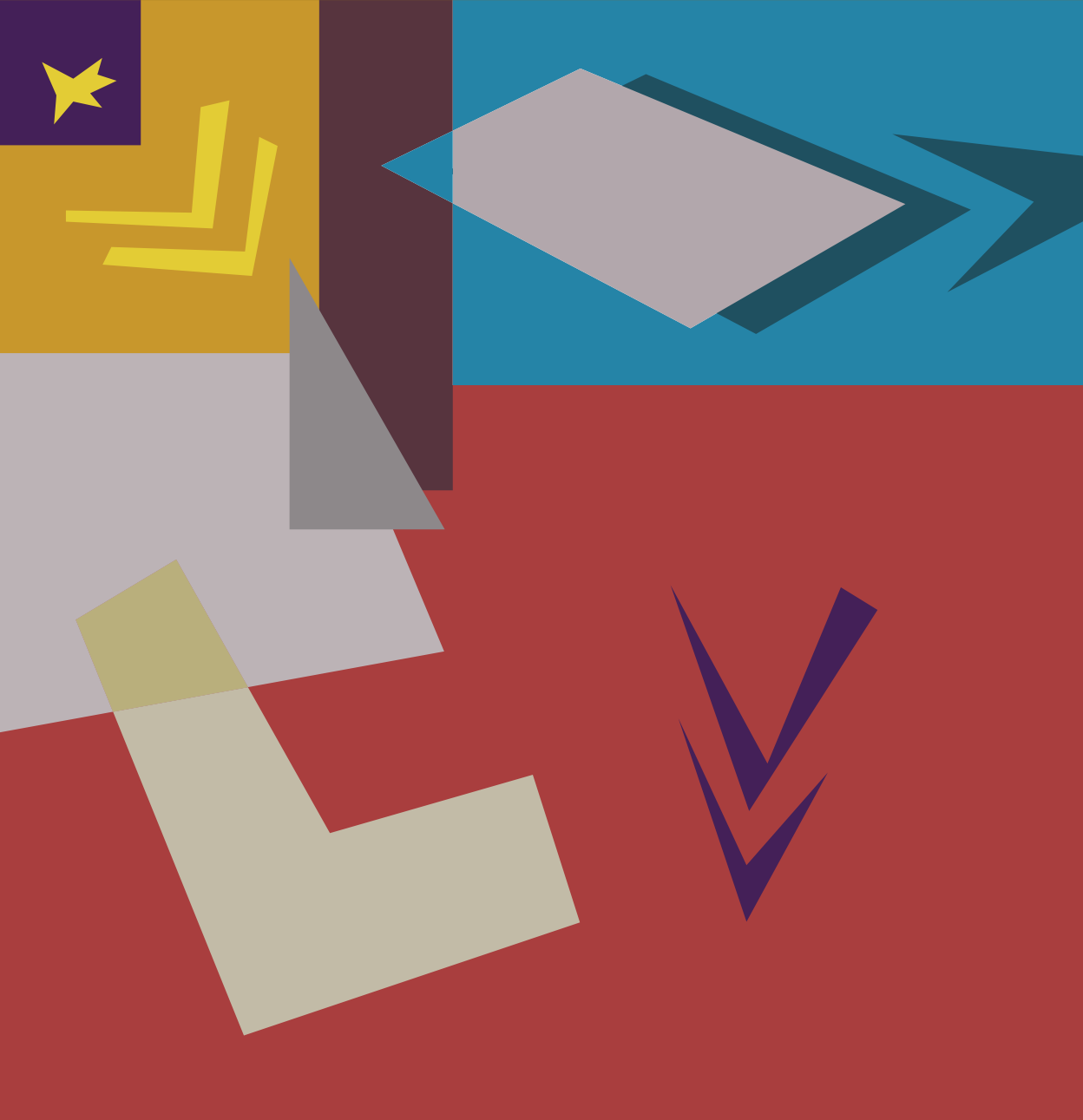


SWEDISH UNIVERSITIES & UNIVERSITY COLLEGES

SHORT VERSION OF ANNUAL REPORT 2001



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INTRODUCTION

This summary of the *Swedish Universities and University Colleges Annual Report 2001* gives an outline picture of higher education activities in Sweden. The Report provides a basic description of the academic structure in Sweden and the regulatory framework under the heading *Higher education in Sweden*. Subsequent sections of the report summarize developments prior to and including 2000 fiscal year and cover state, regional authority and private universities and university colleges. Analysis in the Annual Report is based on information obtained from a number of sources, including the annual reports published by Swedish universities and university colleges and statistics produced by Statistics Sweden.

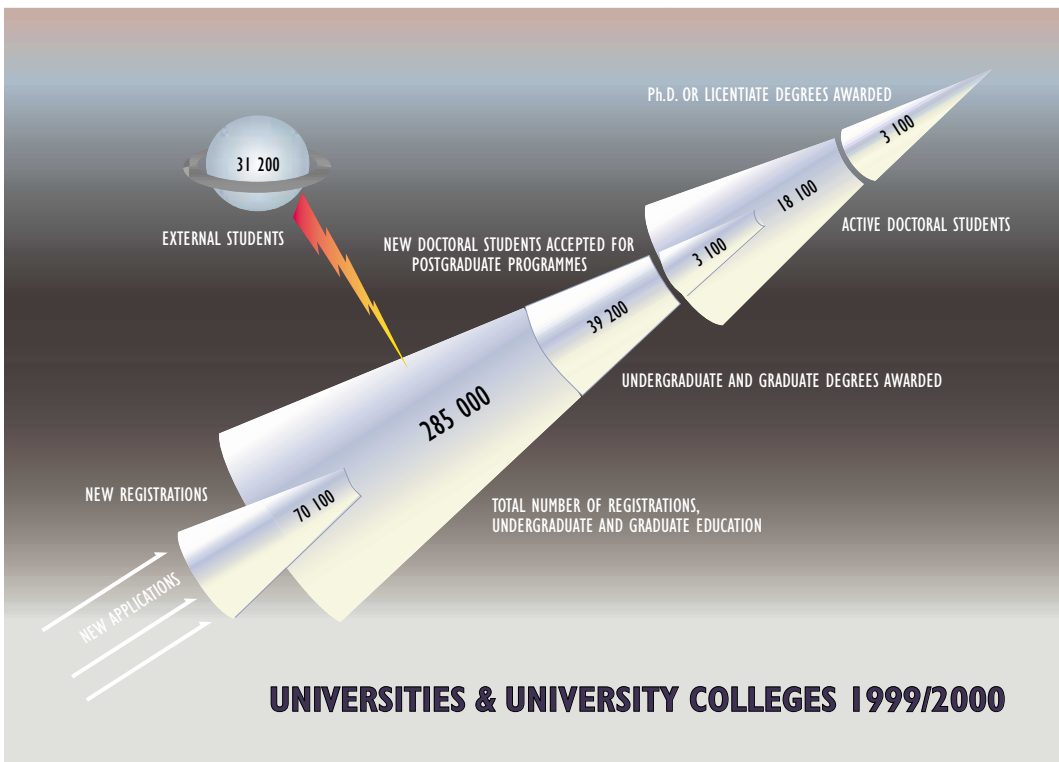


Fig. 1.

HIGHER EDUCATION IN SWEDEN

BRIEF RETROSPECT

As in other countries, higher education in Sweden has expanded during the second half of the twentieth century. With more and more people having the opportunity to study at colleges and universities, higher education is no longer reserved for the few.

In the mid-1940s, higher education in Sweden was provided at the universities of Uppsala and Lund, at the university colleges of Stockholm and Gothenburg and at a number of specialized professional institutions of higher education in the fields of medicine, economics and technology.

As the result of a number of consecutive central government commissions, higher education has then been subsequently expanded. The university colleges of Stockholm and Gothenburg became universities in the late 1950s. University branches were established in Karlstad, Linköping, Växjö and Örebro during the second half of the 1960s to absorb some of the powerful growth in the number of students. Universities were established in Umeå in 1965 and in Linköping in 1975. Higher education and research in the field of technology were established in Luleå in the early 1970s.

The reform of 1977 transferred tertiary institutions and programmes in the fields of nursing and education to the higher education sector. At the same time a number of university colleges were established in various parts of the country.

MORE AND MORE STUDENTS IN HIGHER EDUCATION

The number of students has increased from 16,000 in 1950 to almost 320,000 in 2000. The growth in the number of students has varied greatly throughout the period.

In the early 1950s the number of new students enrolling annually was 4,000 and the number of degrees taken was 3,000 per year.

In the 1950s the number of students in higher education doubled. The greatest expansion occurred in the 1960s. At the end of the 1960s there were over three times as many students in higher education as at the start of the decade. The number of degrees taken also increased.



Fig. 2. Swedish Universities and University Colleges run by central government, regional authorities and private interests.

The reform of higher education in 1977 extended the definition of higher education and the number of students increased still further. During the closing years of the 1970s and most of the 1980s, the number of students in higher education remained constant, on the whole. At the end of the 1980s a new period of expansion commenced which has continued throughout the 1990s. Between 1990 and 1999, the number of students in undergraduate education increased by 60 per cent.

In the academic year 1999/2000, there were 319,100 students in undergraduate education. 70,100 of these were new students. The number of degrees taken was 39,200. There were about 18,000 active postgraduate students. 3,100 of these were new to postgraduate studies, and 3,200 licentiate degrees and PhDs were taken.

THE REFORMS OF 1977 AND 1993

The higher education system in Sweden has been reshaped by two comprehensive reforms in 1977 and 1993. In conjunction with the reform of 1977 practically all post upper-secondary education was brought together under the overall concept of higher education. The volumes and location of higher education and the organizational structure of the institutions was regulated in a rather detailed way by central government from 1977 to 1993. For instance, Parliament decided the number of student places to be allocated to every general study programme and institution of higher education.

In the early 1990s yet another reform of higher education was initiated. A new Higher Education Act and a new Higher Education Ordinance came into force on 1 July 1993. This reduced the detailed influence of central government and a decentralization of decision-making was implemented. The reform meant that central government — once it has laid down certain goals and guidelines that are mainly financial in nature — transfers decisions about the orientation of the programmes in undergraduate education to the institutions of higher education themselves in the form of three-year education assignments. Every institution of higher education functions as an admissions agency and takes decisions on the admission of students on the basis of certain general guidelines. An important objective of the 1993 reform of higher education was to give students a greater opportunity of

choosing courses for themselves and combining them into a degree. A degree ordinance stipulates the degrees that may be taken.

A new system of allocating resources to undergraduate education was introduced as of the academic year 1993/94. Institutions of higher education are now allocated resources based on the number of students registered and their academic performance rather than on the basis of the planned volume of education as was previously the case.

Also the organizational structure of national agencies in the higher education sector has been modified in the 1990s. In 1995, the National Agency for Higher Education was established as the national agency for matters concerning institutions of higher education. The agency has responsibilities in relation to accreditation and evaluation, issues of quality and educational innovation, research and analysis, supervision, protection of legal rights, study information and international matters within the higher education sector. The National Admissions Office to Higher Education is another central agency which coordinates the admission of students and is primarily funded by the institutions of higher education themselves. The National Board of Student Aid administers various forms of study support for students in higher education.

THE HIGHER EDUCATION SECTOR TODAY

In the fiscal year 2000 there were some fifty institutions of higher education in Sweden run by either central government, regional authorities or private interests.

The state-run part of the higher education sector comprised 11 universities plus the Karolinska Institute and the Royal Institute of Technology, 7 independent colleges of art and 16 university colleges including the Stockholm Institute of Education and the Stockholm University College of Physical Education and Sports. In all there were 36 state-run institutions of higher education.

One college of health sciences and one college of music were run by county councils.

Chalmers University of Technology, the Stockholm School of Economics and the University College of Jönköping were run by private sector governing bodies. There were also 9 smaller private institutions of higher education with the right to award certain degrees of undergraduate education.

RULES RELATING TO UNDERGRADUATE EDUCATION

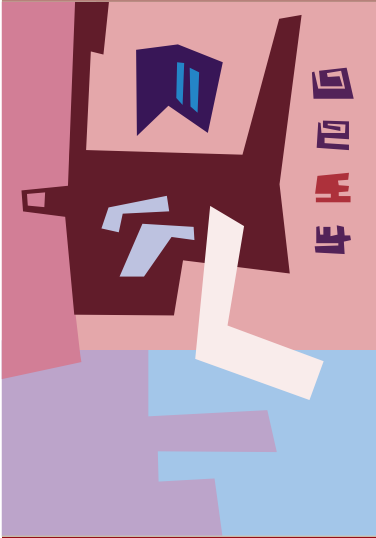
To be admitted to undergraduate education the applicant must satisfy the basic eligibility requirements, which are the same for all courses and programmes of education. Basic eligibility is attained by completing an upper secondary school programme and obtaining a pass grade or better in courses comprising at least 90 per cent of the upper secondary credits required in the programme, or by providing proof of an equivalent level of knowledge. People who are at least 25 years old, who have been in work for four years and who have a command of English and Swedish corresponding to that obtained by completing a national upper secondary programme are also considered to have basic eligibility.

Most courses and programmes of education also have course eligibility requirements that vary depending on the subject area and the type of course. Course eligibility requirements in courses open to new students are set out in the form of standard eligibility requirements. The National Agency for Higher Education determines these for programmes leading to a professional degree in accordance with the Degree Ordinance. Standard course requirements are set locally by the institutions of higher education in question.

If the number of qualified applicants for a course or a programme exceeds the number of places allotted for new students, a selection process is necessary. At least a third of the places must be allocated on the basis of upper secondary grades, and at least a third on the basis of the national scholastic aptitude test. The national scholastic aptitude test measures knowledge and skills of importance for successful studies in higher education. In addition to grades and the national scholastic aptitude test, selection from qualified applicants can also be made on the basis of previous training, work experience or special tests, such as interviews or tests of skill.

EDUCATION AND DEGREES

All undergraduate education is provided in the form of courses. These may be linked to constitute a programme of education with a varying element of individual choice. Students themselves are also able to combine different courses into a degree.



In the Degree Ordinance, the Government has laid down which degrees may be awarded and the objectives for these degrees. Every course and programme of education has a plan decided by the institute of higher education in question. Degrees in undergraduate education are divided into general degrees and professional degrees.

General degrees. A Master's degree is obtained after studies totalling at least 160 credits (the equivalent of four years' full-time study), of which 80 credits must be in the major subject. The major subject must also include one thesis comprising at least 20 credits or two projects of 10 credits each.

A Bachelor's degree is obtained after studies totalling at least 120 credits (the equivalent of three years' full-time study), of which 60 credits must be in the major subject. The major subject must also include one thesis comprising at least 10 credits.

A University Diploma is obtained after studies totalling at least 80 credits.

Professional degrees. In addition to the general degrees there are some sixty professional degrees for which specific objectives are stated in the Degree Ordinance. Medical qualifications, engineering degrees, and agronomics degrees are examples of such professional degrees.

STUDY FUNDING

It is possible for students to obtain state support to finance their studies in higher education. This support consists of study grants and study loans in combination. To obtain financial support for studies certain requirements must be met. If students have an income, the amount of support may be reduced. To receive study support over a period of years, students must pursue their studies with a certain rate of success.

On 1 July 2001 a comprehensive new study assistance system was introduced covering adult students at compulsory school, upper secondary school, institutions of higher education and other post-secondary institutions. The new system is based on the existing post-secondary study assistance programme. The level of independent income allowed will be raised and the grant component will count as income in future state pensions entitlements.

As of academic year 2001, the grant portion of study support for an academic year nine months amounts to 22,300 kronor (SEK) and the loan ceiling to 42,400 kronor. The maximum total available government-sponsored study funding for an individual student pursuing full-time studies in 2001 thus amounts to 64,700 kronor.

RULES RELATING TO POSTGRADUATE TRAINING

Postgraduate training is based on undergraduate education of at least 120 credits with at least 60 credits in the research subject. Furthermore, the faculty board in question may add other requirements for admission. An assessment is also made of an applicant's capacity for completing postgraduate studies.

POSTGRADUATE TRAINING AND DEGREES

Postgraduate training nominally comprises 160 credits (four years) and leads to a PhD. A Licentiate degree may be taken after two years and comprises at least 80 credits.

A PhD student must complete a number of courses and write a doctoral dissertation. Each student has the right to personal supervision. The dissertation, which constitutes the most important part of postgraduate studies must be defended at a public oral examination.

Institutes with the right to award postgraduate degrees are the universities plus the Karolinska Institute, the Royal Institute of Technology, Chalmers University of Technology, the Swedish University of Agricultural Sciences, the Stockholm School of Economics and the University College of Jönköping. Many of the other institutions of higher education in Sweden collaborate with these institutions in the organization of research training.

Recently, new regulations has been introduced to enable other institutions of higher education to obtain the right to give postgraduate training and award postgraduate degrees. This will occur by way of the Government granting an institution of higher education university status after assessment and approval. Institutions of higher education will also have the possibility of establishing one or more areas of research after assessment and approval.

As of 1999, the University Colleges of Karlstad, Växjö and Örebro have been granted university status, thereby gaining the right to carry out postgraduate training and to award postgraduate degrees. From the same year, the University College of Kalmar has been granted the area of research of Natural Science, Blekinge Institute of Technology the area of research of Technology and the University College of Malmö the area of research of Medicine. As of 2001 the University College of Mälardalen has been granted the area of research of Technology and the Mid-Sweden University College the area of research of Natural Science. Within these designated areas of research, the university colleges in question have the right to carry out postgraduate training and award postgraduate degrees.

STUDY FUNDING IN POSTGRADUATE TRAINING

Postgraduate training is financed out of the state funding allocated to each faculty. There is also funding from external sources such as research councils. The faculty boards decide whether the earmarked state resources should be used for postgraduate posts or for study grants. Both posts and grants run for four years. A grant may also be shared between two postgraduate students. Postgraduate students holding postgraduate posts are obliged to concentrate on their studies, but are allowed to combine them with teaching or other work to a limited extent. A relatively common way of financing postgraduate studies is to combine them with work on a research project which may be externally funded by a research council or a sectoral agency.

In 1998, the rules for funding postgraduate studies were modified. Among other things it is stipulated that only applicants that can be employed in a postgraduate post or awarded a study grant may be admitted to postgraduate training. In other cases the applicant must have guaranteed study funding for the whole period of study. There are certain transitional rules.

RESEARCH WITHIN HIGHER EDUCATION

Sweden allocates a relatively high proportion of its resources to research and development (R&D). The proportion of GNP going to R&D is some 3.9 per cent. The higher education sector is re-

sponsible for just over a fifth of the resources spent on R&D in Sweden. Most R&D is conducted within private sector companies.

By far the greatest part of publicly funded research takes place at institutions of higher education. Thus, institutions of higher education have a central role in the Swedish research system, not merely because they constitute the traditional base for research and postgraduate training, but also because they conduct research on behalf of sectoral public agencies and the private sector. Research activities have also great significance for basic higher education.

For the most part, research and postgraduate training take place at universities and specialized professional institutions of higher education. But the university colleges are gradually expanding in research and postgraduate training.

FUNDING HIGHER EDUCATION

Institutions of higher education receive an educational assignment for each new three-year period. The allocation of resources depends on results measured in terms of students (calculated in terms of full time equivalent, FTE, students) and study achievements (calculated in terms of annual performance equivalents) at the institutions of higher education.

In the education assignments for the period 2000–2002 minimum numbers of certain degrees taken at the institutions of higher education in question are stipulated. Objectives with respect to the lowest number of FTE students as a whole and for the lowest number of FTE students in the science and technology areas are set out for each fiscal year. The education assignment may also stipulate that the number of FTE students must increase or diminish in certain subject areas compared with the preceding three-year period. There is a ceiling sum (maximum funding) which constitutes the highest aggregate compensation for FTE students and annual performance equivalents permitted for the fiscal year.

The amounts of compensation for FTE students and annual performance equivalents are determined annually by the national government and set out in its annual budget. The amounts are not the same for different subject areas. At the institutions of higher education all courses are classified by subject area. This classification determines the compensation that will be obtained. See figure 3.

Subject area	Payment per full-time equivalent student (SEK)	Payment for annual performance equivalent (SEK)
Humanities	13,805	14,453
Theology		
Law		
Social sciences		
Science	37,286	34,096
Technology		
Pharmacy/ pharmacology		
Nursing		
Odontology	33,858	42,340
Medicine	45,551	59,742
Education*	26,675	33,790
Other**	31,323	26,971
Design	111,076	71,381
Art	158,395	71,403
Music	95,647	63,904
Opera	228,341	144,076
Theatre	221,297	116,002
Media	223,824	190,401
Dance	155,213	90,503
Physical education and sports	81,287	39,502

Fig. 3. Compensation amounts for undergraduate education fiscal year 2001.

* Education methodology aspects of teacher training programmes.

** Journalist and librarian programmes and practical artistic courses in teaching training programmes.

FUNDING FROM THE NATIONAL BUDGET TO RESEARCH AND POSTGRADUATE TRAINING

Research and postgraduate training is funded by way of special grants to the institutions of higher education in question. Up to 1998 the amounts were distributed by central government to the various faculties at the institutions of higher education concerned. As of 1999, resources for research and postgraduate training will no longer be allocated by faculty but will be distributed to four areas of research — humanities/social science, medicine, natural science and technology. There is also a special item to cover compensation for such costs as rent of premises. Certain conditions are attached to the grants. For instance, not less than a certain proportion of the grant must be used to fund postgraduate training. A special grant for artistic development work is distributed to the university colleges of art.

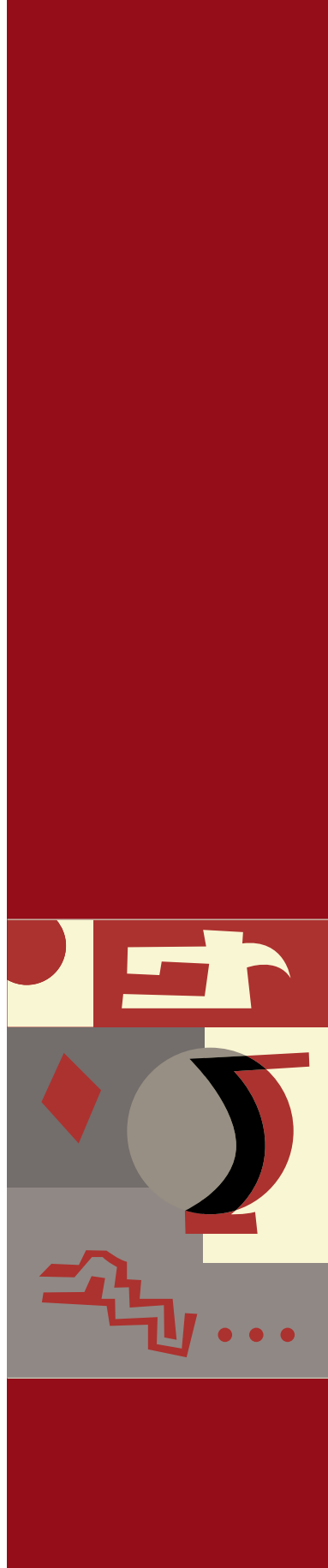
EXTERNAL RESOURCES

The grants from the national budget for undergraduate education and research/postgraduate training, which are allocated directly to state-run institutions of higher education, make up about 60 per cent of the resources of these institutions of higher education. The remaining portion comprises external resources for research and contract work mostly provided by research councils and sectoral agencies, together with local authorities, county councils and private sector companies.

ORGANIZATIONAL STRUCTURE AND TEACHING POSTS

Today the internal organization of institutions of higher education is decided by the institutions themselves. Certain guidelines are laid down in the Higher Education Act and the Higher Education Ordinance.

As previously, each institution of higher education must be run by a governing board. The Government appoints the Chair of the board. Until 1997 the Vice-Chancellor automatically became Chair of the board, but as of 1998 it is stipulated that the Government should appoint a Chair who is not employed at the institution of higher education in question. The management board is composed



of the Chair, the Vice-Chancellor and not more than thirteen other members. The Government appoints the majority of the members of the governing board. The representatives of the teaching staff are chosen by election within the institution of higher education. The students have the right to be represented by three members. Employee representatives have the right to attend and to speak at board meetings.

The Vice-Chancellor is nominated by the board and employed by Government decision for not more than six years. Other board members are appointed for a period of not more than three years. A Pro-Vice-Chancellor is the Vice-Chancellor's deputy. More than one Pro-Vice-Chancellor may be appointed. An institution of higher education may also appoint Pro-Vice-Chancellors with responsibility for parts of its operations.

By 1998, all institutions of higher education organized on faculty lines had to have faculty boards as the bodies responsible for research and postgraduate training. As of 1999, it is stipulated that all institutions of higher education granted an area of research shall have at least one faculty board. If an institution of higher education decides not to create specific decision-making bodies for undergraduate education, the faculty boards are also responsible for the undergraduate education carried out in their area of study. The Dean of Faculty is the chair of the faculty board. In the decision-making bodies created for matters of research and undergraduate education, the teaching staff is always to have the majority. The students have the right to be represented by at least two members on the faculty board and on other bodies dealing with educational matters.

With the exception of the above-mentioned rules concerning governing bodies, faculty boards and other bodies, Swedish institutions of higher education may themselves determine their internal organizational structure and the decision-making bodies and boards required for their purposes.

The Higher Education Ordinance contains regulations with respect to the employment of teaching staff at institutions of higher education. The categories concerned are: professors (including visiting professors), senior lecturers (including visiting senior lecturers), junior lecturers (including visiting junior lecturers), post-

doctoral fellows, part-time teachers (paid on an hourly basis) and guest teachers.

As of 1999, new rules for the employment, recruitment and promotion of teaching staff have been introduced. The rules mean, for instance, that a senior lecturer who satisfies the employment requirements of a professor shall be employed as a professor. Educational skills should be given greater weight in this promotion than before. In addition, recruitment objectives are specified with a view to increasing the number of women among newly-appointed professors.

TRENDS AND DEVELOPMENTS

In this section and the next one the aim is to focus on certain aspects of the development of higher education and to situate Sweden on a map of international comparisons.

First the major features of recent developments in undergraduate education and in postgraduate training will be dealt with. Finally the development of resources and staff in higher education will be discussed.

UNDERGRADUATE EDUCATION

Overall, the number of applicants for higher education far exceeds the number of places available. But the expansion of undergraduate programmes during the 1990s and some reduction in demand has led to empty places at some higher education institutions and in some programmes.

However, even if there has been a slight reduction in the number of applicants in recent years, just under 110,000 individuals who had not previously studied at this level applied for places at Swedish universities and university colleges for the autumn semester of 2000. This should be compared with the autumn of 1991 when there were just over 70,000 applicants to higher education. See figure 4.

The total number of applicants peaked in 1997 and has subsequently declined. This can be explained by a reduction in the number of young people leaving the upper-secondary schools, an improved labour market and also increases in the number of places. But the situation varies from institution to institution and programme to programme. Some programmes have 10 applicants for every place on offer, while others are admitting all those who apply and still cannot fill all their places.

The pressure of applications was at its greatest in 1997 when only 40 per cent of those applying were admitted. Just over half of those applying for the autumn of 2000 were offered places, so that the pressure of applications is once again the same as it was at the beginning of the 1990s. The numbers applying for places for the autumn of 2001 has declined even further, as has the number of

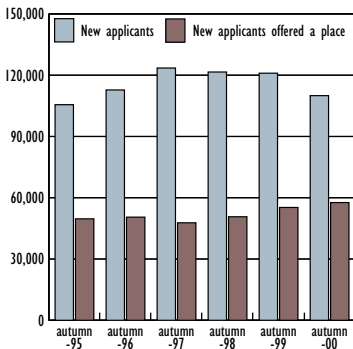


Fig. 4. Number of new applicants, not previously participating in higher education, and number of new applicants offered a place autumn terms 1995–2000.

those taking the national scholastic aptitude test. This suggests that the balance between supply and demand for higher education is improving.

MORE DIFFICULT TO RECRUIT STUDENTS TO SOME PROGRAMMES

Interest among students in their last year of upper-secondary education in proceeding to higher education continued to rise up to 1998, when just under 60 per cent planned to study at university level. Since then interest in higher education has declined and in the most recent survey the proportion had dropped to 50 per cent. This drop is particularly large for programmes in engineering and the natural sciences.

It is difficult to recruit students to certain courses and programmes of education. The recruitment situation also varies between institutions of higher education. Despite massive 'advertising campaigns', a number of institutions have fewer students than they planned for. These recruitment difficulties primarily affect some teachers training programmes oriented towards maths and science subjects and certain short-duration programmes in engineering.

Because of the difficulties of recruiting students to the fields of the natural sciences and technology, the Government has permitted institutions of higher education to reduce the number of students in maths and natural sciences programmes and instead to increase their capacity in the subject areas of the arts, the social sciences and law, where there is a strong demand for places.

MORE NEW STUDENTS IN HIGHER EDUCATION

After some years of stagnation and even decline, there was a relatively large increase during the academic year 1999/2000 in the number of new students coming into higher education. The increase in the numbers of first-time students, or in other words students who had not previously studied at university level, between the academic years 1998/99 and 1999/2000 was 5 per cent, which is almost as large as the average annual increase during the period of rapid expansion during the first half of the 1990s.

The number of students beginning university studies during the academic year 1999/2000 totalled 70,100. See figure 5. The trend noticed previously for students to be older was again confirmed by

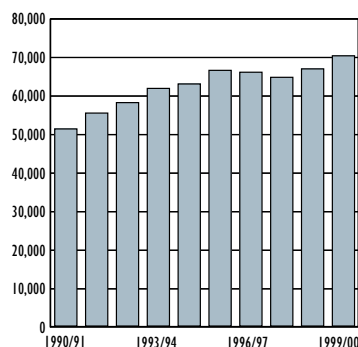


Fig. 5. New students in undergraduate education academic years 1990/91–1999/00.

these statistics. The number of first-time students under the age of 22 was 47 per cent for the academic year 1999/2000, a reduction of 5 percentage points since the middle of the 1990s. The proportion of first-time students who were women was 58 per cent, an increase of a couple of percentage points since 1994/95.

ONLY HALF OF THE FIRST-TIME STUDENTS IN HIGHER
EDUCATION COME FROM TRADITIONAL SWEDISH
ACADEMICALLY-ORIENTED UPPER-SECONDARY PROGRAMMES

In the academic year of 1999/2000, some 75 per cent of first-time students in higher education had completed a Swedish upper-secondary education. 15 per cent of first-time students were registered residents of Sweden who had not completed a Swedish upper-secondary education, but had qualifications from municipal adult education or a folk high school or a foreign upper-secondary education. Some 10 per cent were exchange students and other individuals not registered as residents of Sweden. This latter group increased markedly during the 1990s.

Almost half of the first-time students came from natural sciences or social sciences programmes or the equivalent academically oriented upper-secondary lines that preceded them. Some 20 per cent of first-time students came from two or three-year programmes with a vocational orientation. Some 5 per cent came from two-year theoretical or specially designed programmes.

MORE YOUNG PEOPLE WITH WORKING-CLASS
BACKGROUNDS ARE BEING ADMITTED TO HIGHER
EDUCATION, BUT THE FACT OF A SOCIALLY SKEWED
RECRUITMENT IS ONLY marginally AFFECTED

During the 1990s certain changes have taken place in the social backgrounds of those newly admitted to higher education. The proportion of students from the homes of senior white-collar employees fell from 32 to 27 per cent between 1990/91 and 1998/99, while the proportion from working-class homes rose from 20 to 24 per cent during the same period.

Although a certain levelling has thus taken place with respect to the social background of those newly admitted to higher education, the 1990s have not seen any great changes in the socially skewed recruitment traditional in higher education.

The proportion of newly admitted students has increased in all background groups. Before the age of 21, of those born in 1977, 57 per cent of those from senior white-collar backgrounds had begun courses of higher education. The corresponding proportion for those from unskilled working-class families was 15 per cent. For those born in 1968 the proportions were 36 per cent and 7 per cent respectively.

When it comes to the recruitment of students from different social backgrounds, a clear general distinction can be made between the smaller and newer higher education institutions and the older universities and specialist institutions. In the first group there is much more even social mix than at the universities and specialist institutions. These variations can, however, be largely ascribed to the differences in the programmes offered.

It should be pointed out in this context that the decisive social differentiations are not made in connection with the transfer to higher education but much earlier in the social and educational system.

MORE WOMEN TAKING COURSES IN TECHNOLOGY

There has been a notable increase in the proportion of women taking courses in technical subjects in recent years. For many years the proportion of women among those studying for a diploma in graduate engineering was around 20 per cent. In recent years this proportion has grown, reaching 26 per cent in the academic year of 1999/2000.

The proportion of women among those studying shorter engineering programmes has also increased to 26 per cent in the academic year of 19989/2000. The expansion of the technological-natural sciences foundation year has probably contributed to this development.

THERE HAS BEEN A GREAT EXPANSION OF UNDERGRADUATE EDUCATION IN THE 1990S

The number of students increased by almost 60 per cent during the 1990s. At the start of the decade there were a little over 200,000 students. In the academic year of 1999/2000, the number of students had risen to over 319,000.

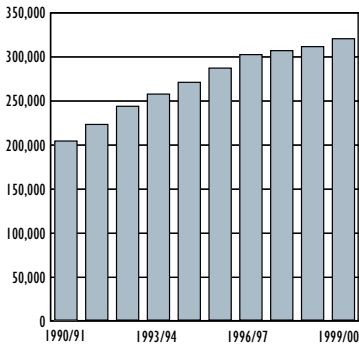


Fig. 6. Students in undergraduate education academic years 1990/91–1999/00, head counts.

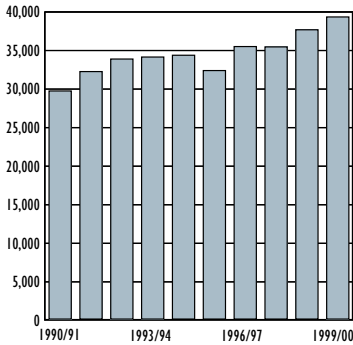


Fig. 7. Degrees in undergraduate education academic years 1990/91–1999/00.

The increase from 1998/99 was almost three per cent, twice as high as the annual rate of increase for the three preceding years. During the first half of the 1990s, however, the rate of increase was significantly higher. The development of the numbers of students at different higher education institutions varied greatly. At several of the older universities student numbers are declining. On the other hand the new universities together with almost all the university colleges report rising numbers. See figure 6.

LARGE INCREASE IN THE NUMBER OF QUALIFICATIONS AWARDED

During the 1990s the number of qualifications awarded has increased by 32 per cent to a total of 39,200 for the academic year 1999/2000. As in previous years, about 60 per cent of these were awarded to women. The tendency is much the same for the different qualifications. The largest increase can be observed in Master’s degrees, of which 7,000 were awarded in 1999/2000. This means that today Master’s degrees, which require four years of full-time study, are awarded almost as frequently as Bachelor’s degrees, which require three years. See figure 7.

The number of Master’s degrees in engineering also continued to rise to almost 4,000 during 1999/2000. This is an increase of over 50 per cent during the last decade. More qualifications were awarded for shorter programmes in engineering as well – although these were relatively few in number to begin with. On the other hand a reduction can be observed in the numbers of qualifications awarded in programmes for nursery school and leisure centre staff.

The expansion of higher education has been accompanied by major restructuring as well. Several programmes have been extended and a new four-year Master’s degree has been introduced. The qualifications awarded today are often more advanced in content than previously. At the beginning of the 1990s, for instance, 57 per cent of the qualifications awarded were for programmes that required less than three years of study. The corresponding proportion for 1999/2000 was only 8 per cent.

The number of degrees awarded for programmes that comprise at least four years of study has doubled during the 1990s and the

number for programmes comprising between three and four years has more than doubled. On average, the years of study required for the award of a qualification has increased from 2.7 to nearly 3.7, or in other words by one year on average.

Generally speaking the frequency of completion of programmes has dropped during the 1990s. This is made clear if the various cohorts of beginners are followed up. After seven years, 45 per cent of those who began their studies at higher education institutions had completed their programmes. Among those who began five years earlier, the corresponding proportion was almost ten percentage points higher.

But not everyone who begins a programme at university level intends to complete it. Many of those who receive no formal qualification have studied extensively. Some of them have even gained more credit points than many students awarded degrees.

INTERNATIONAL EXCHANGE

More and more students are taking advantage of the opportunity to study outside Sweden. During 1999/2000 almost 27,500 students, 64 per cent of them women, were granted financial support for undergraduate studies abroad. Most of these are students who make their own arrangements and then apply for financial support, often known as “free movers”. See figure 8. Almost 6,000 students participated in student exchanges arranged as part of their programme at a Swedish institution. Here the European exchange programme Erasmus, which accounts for almost half of all the exchanges arranged in programmes, predominates.

About ninety Swedish students were granted financial support for studies in Africa, while around 18,000 remained in Europe. Just over two thousand opted for studies in Oceania, and three times as many chose to study in North America.

For both free movers and students participating in organised exchanges, the USA and the United Kingdom are the most popular destinations – each of these countries takes just over 20 per cent of the total number awarded financial support for studies abroad. If the figures for France and Spain are combined, they receive just over an additional 20 per cent. Altogether these five countries accept almost two thirds of Swedish exchange students.

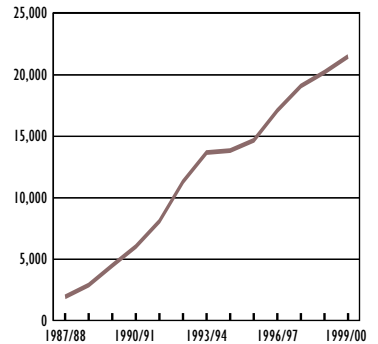


Fig. 8. Number of Swedish persons studying at foreign institutions of higher education on their own initiative—“free movers”—1987/88–1999/00.

Courses in the humanities attract most free movers – more than a third are studying humanities subjects. Even though this is the most popular area for free movers of both sexes, more than twice as many women as men travel abroad to study the humanities. About three quarters of those who travel abroad on their own initiative to study engineering are men, but this is a much smaller group – approximately 550 students.

POSTGRADUATE STUDIES

During the 1990s the numbers of students beginning postgraduate programmes increased year by year up until 1997/98, when almost 4,000 students began such programmes. This is the highest number of students beginning postgraduate programmes ever. From April 1998 and onwards, when new enrolment regulations with more stringent funding requirements for postgraduate students came into force, there was a marked reduction in the number of beginners and in 1998/99 just over 3,100 postgraduate students began their programmes.

THE NUMBER OF FIRST-TIME POSTGRADUATE STUDENTS CONTINUES TO DECLINE

During the academic year 1999/2000 the number of first-time students declined even further to 3,090 so that it is now at the same level as for 1995/96. This decline is partly linked to the 1998 reform and its more stringent funding requirements, but is also an effect of a more favourable labour market, particularly for engineering and the natural sciences. In many fields it is difficult for universities to pay salaries to doctoral students that can compete with those offered in industry. See figure 9.

The most dramatic decline in the numbers of first-time postgraduate students has taken place in the humanities and the social sciences, but this number has also gone down for medicine as well. A slight decline can also be perceived in engineering. On the other hand there are no discernible changes in the number of first-time students in the field of natural sciences since the reform. Here the number has remained more or less the same for the last five years.

Almost half or 45 per cent of the students beginning postgraduate programmes in 1999/2000 were women. The largest pro-

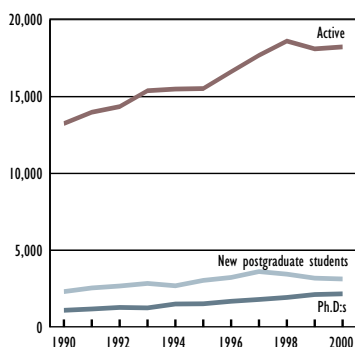


Fig. 9. Active and new postgraduate students and Ph.D.s 1990–2000.

portion is in the field of medicine with 58 per cent. The proportion of women among first-time students in the engineering sciences, which is the lowest, was 26 per cent. In the humanities and social sciences the proportion of women was fifty per cent and in the natural sciences it was forty per cent.

STAGNATION IN THE TOTAL NUMBER OF POSTGRADUATE STUDENTS

Since the 1998 financing reform, the number of active postgraduate students, which had previously increased year by year, has remained at practically the same level, just over 18,000. The total has even declined somewhat during the academic year 1999/2000.

The proportion of active postgraduate students in the humanities and social sciences is 32 per cent. Engineering and the medical sciences are on a more or less equal footing with 26 and 25 per cent. The natural sciences account for 13 per cent, the Swedish University of Agricultural Sciences for 4 per cent of active postgraduate students.

MANY POSTGRADUATE STUDENTS WERE BORN ABROAD

About 20 per cent of active postgraduate students were born outside Sweden. The largest proportion of postgraduate students with a foreign background, 25 per cent, come from Asia, where the largest individual nation is China, with eleven per cent. The second largest proportion come from the EU (excluding Denmark and Finland) with 21 per cent.

The highest proportion of postgraduate students with foreign backgrounds can be found in the medical sciences, 28 per cent. This is followed by the natural sciences and engineering, with 26 and 25 per cent. The figures for programmes in jurisprudence and law are much lower, for example, where only eleven per cent of postgraduate students have a foreign background.

SLIGHT INCREASE IN THE NUMBER OF DEGREES AWARDED

The number of postgraduate degrees awarded continues to increase, but at a slower rate than previously during the 1990s. In all, 3,200 postgraduate degrees were awarded during 2000. Of these, 2,200 were doctorates and 1,000 licentiate degrees.

The largest proportion of doctoral degrees, 34 per cent, were awarded in the medical sciences. This is followed in size by the humanities and social sciences, engineering and the natural sciences.

Since 1990, the number of postgraduate degrees has doubled on the whole in every discipline, which means that the average annual rate of increase has been seven per cent. During last year this increase abated without exception. During 2000 the number of degrees awarded in the humanities and social sciences and in engineering sciences was lower than in the preceding year.

The proportion of women receiving postgraduate degrees continues to rise. During the last decade, the number of women submitting theses has increased by almost 12 percentage points, amounting to 39 per cent in 2000.

RESEARCH

Resources overall for R&D in Sweden increased by 80 per cent between 1989 and 1999 (fixed price). This increase is largely due to R&D investments by industry, mainly by large companies. According to Statistics Sweden, total expenditure on R&D amounted in 1999 to 75.8 billion SEK. The business sector accounted for 75 per cent of this expenditure, universities and university colleges for 22 per cent and the remainder can be ascribed to government agencies and the private non-profit sector.

There has not been as large an increase in R&D resources in the universities and university colleges as in the business sector, which means that their share of R&D expenditure has shrunk from 30 per cent in 1989 to 22 per cent in 1999. Although the share of the universities and university colleges in the total expenditure on R&D in Sweden is declining, the resources of the institutions of higher education for research and postgraduate programmes have risen, mainly during the latter half of the 1990s.

TWO THIRDS OF R&D RESOURCES IN THE HIGHER EDUCATION SECTOR GO TO MEDICINE, ENGINEERING AND THE NATURAL SCIENCES

The major research areas are medicine, engineering and the natural sciences, which together account for two thirds of R&D



resources at universities and university colleges. The largest share of R&D resources in 1999 went to the medical sciences which received just over 27 per cent. The largest research subjects were physiology and pharmacology, medicine and surgery.

The engineering sciences accounted for 22 per cent of R&D resources. Information technology and engineering mechanics were the largest subjects. The natural sciences and mathematics received 21 per cent, with biology, physics and chemistry as the largest subjects.

The social sciences including jurisprudence and law received 12 per cent of the resources. Half of these were allocated to the social sciences. Research in the humanities and religious studies secured 6 per cent of the resources. See figure 10.

MORE INSTITUTIONS OF HIGHER EDUCATION
RECEIVE RESOURCES FOR RESEARCH

The resources available at universities and university colleges for research continue to rise and amounted to 19.5 billion SEK for the fiscal year 2000. This corresponds to an increase of 20 per cent since 1995 (fixed price).

Nearly all higher education institutions have increased their revenues for research since the mid-1990s. Relatively speaking this increase has, for natural reasons, been largest at the university colleges that in 1995 had no established research resources. The allocation of resources for research between the institutions has meant that the proportion of research resources at the new universities together with the university colleges has increased from 2 per cent in 1994/95 to 8 per cent in 2000.

THE PROPORTION OF DIRECT NATIONAL GOVERNMENT
GRANTS TO RESEARCH AND POSTGRADUATE TRAINING IS
FALLING WHILE EXTERNAL FUNDING IS INCREASING

In the early 1980s, two-thirds of research and postgraduate training at institutions of higher education was funded by faculty grants and other direct government grants to the institutes. By 2000 this proportion had fallen to 46 per cent, which means that 54 per cent

Research area	
Humanities/Theology	6 %
Social sciences/law	12 %
Mathematics	2 %
Natural sciences	19 %
Technology	22 %
Agriculture	6 %
Medicin	27 %
Other	7 %

Fig. 10. Allocation of resources for research at institutions of higher education 1999, per cent.

of the research activities carried out in the higher education sector are dependent on external providers of funding, mainly research councils and sectoral agencies, but now also, and increasingly, research foundations and EU funding. The proportion of publicly funded activities in research and postgraduate training at institutions of higher education fell during the same period from rather more than 90 per cent to around 75 per cent.

Growth in external funding provides better opportunities for institutions of higher education to collaborate with the communities in which they are located. But also, it means that the control of research decisions moves outside the institutions. Purely scientific and academic criteria for research efforts have been facing growing competition from criteria decided by external parties.

COLLABORATION WITH THE SOCIETY AT LARGE HAS COME INTO SHARPER FOCUS

Institutions of higher education are expected to collaborate with their local communities, the business community, the public sector and activities for the benefit of the general public and provide information about their activities. This “third assignment”, as it is known, has come into sharper focus in recent years and is now explicitly formulated in the Higher Education Act.

Regarding the business community, institutions of higher education in the field of technology quite naturally have many available channels of contact, such as research centres, industrial research institutes, technology parks, holding companies, contract research, industrial postgraduate students and competence centres.

Most institutions of higher education have set up special units to take care of contacts with the business community and the community in general, working life centres to support the transition of students to professional employment, special bodies for cooperation between the institution of higher education and the region in which it is located, etc.

Many institutions of higher education have special technology parks and “incubator units” to facilitate for researchers wishing to start companies.

RESOURCES

The activities of the universities and university colleges continued to increase in volume during 2000. This increase was almost two per cent – somewhat larger for research and postgraduate courses than for undergraduate programmes. The total expenditure of the universities and colleges amounted to 36.5 billion SEK in 2000, which is 1.8 per cent of the gross domestic product (GDP). For the entire sector, or in other words including the cost of financial support to students and the central agencies, expenditure amounted to 43.7 billion SEK, which corresponds to 2.1 per cent of the GDP.

See figure 11.

STAFF

Staff employed by universities and university colleges accounted for 48,900 year-equivalents during 2000, an increase of 3 per cent compared to the previous fiscal year. Teaching and research staff accounted for 22,800 equivalents. Postgraduate students appointed to doctoral studentships accounted for 8,100, administrative and technical staff for 16,500 and library staff for 1,600 year-equivalents. In all during the last five years staff has increased by just over 14 per cent. See figure 12.

1,100 LECTURERS HAVE BEEN PROMOTED TO THE RANK OF PROFESSOR

On 1 January 1999 a reformed system of teaching posts at universities and university colleges was introduced, the promotion reform. This system enables senior lecturers with the appropriate qualifications to be appointed as professors and for junior lecturers to be appointed to the post of senior lecturer if suitably qualified.

One result of this reform was that the institutions promoted 1,100 lecturers to the rank of professor. Approximately 500 of these promotions took place in 1999 and 600 in 2000. The proportion of women among those promoted was 18 per cent. In 2000, 13 per cent of all professors were women.

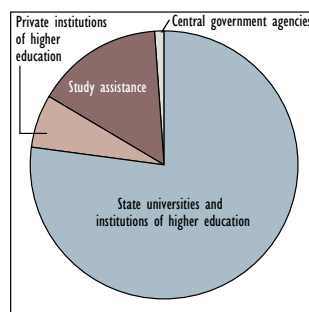


Fig. 11. Allocation of total expenditure in the higher education sector fiscal year 2000, SEK billion. The total cost was 43.7 billion.

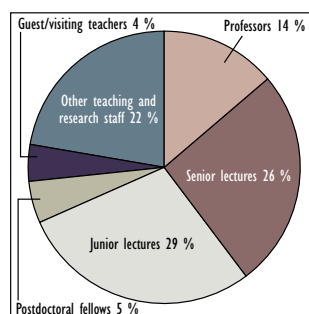


Fig. 12. Percentage allocation of teachers and research staff at institutions of higher education, 2000.

THE PROPORTION OF TEACHERS
WITH DOCTORATES IS INCREASING

The proportion of teachers with doctorates is an important quality indicator. Since the mid-1990s this figure has been rising and in 2000 amounted to 55 per cent. A doctorate is normally required for appointment to teaching posts as professor, senior lecturer or research postdoctoral fellow. In this group the proportion holding doctorates has risen from 85 per cent in 1995/96 to 88 per cent in 2000.

The proportion of professors with doctoral degrees has also risen during this period by three percentage points, totalling 93 per cent in 2000. A relatively large increase in the number of women professors with doctorates can be observed, a rise from 83 per cent in 1995/96 to 91 per cent in 2000. A similar increase can be seen for the proportion of women lecturers with doctoral degrees.

ONE TEACHER AND RESEARCHER IN FOUR WILL REACH
RETIREMENT AGE WITHIN THE NEXT DECADE

In broad terms, 5,000 of the 20,000 teachers and researchers active in state universities and university colleges will retire within the next ten years. Of these, 2,000 will retire within five years, and the remaining 3,000 in the following five years.

It should also be pointed out that nearly 4,000 teachers and researchers are in the 50-54 age group and will be retiring during the period 2010-2015. In other words the number of retirements will increase progressively during the three five-year periods to come.

Half of all professors and thirty per cent of senior lecturers will be retiring in the coming decade. This means that about 1,300 professors and 1,800 senior lecturers will have to be taken on by universities and university colleges in the next ten years solely to fill vacancies caused by retirement. In addition, increasing numbers of students and increasing resources for research will create the need of additional teachers and researchers. This may give rise to recruitment problems, especially as the number of postgraduate degrees awarded could decline. At the same time there is greater scope to restructure activities and change their focus.

THE PROPORTION OF WOMEN PROFESSORS
HAS RISEN TO 13 PER CENT

From an overall point of view the gender balance in the higher education sector is even with 48 per cent women and 52 per cent men. But there are major variations within different categories of staff. The proportion of women among administrative and library staff is high, but relatively low among teaching staff. But the gender balance has evened out, as the proportion of women has increased in several areas. See figure 13.

Attention has been drawn to the proportion of women professors and the government has established an objective for the recruitment of new professors. The proportion of women professors has risen, mainly during the latter half of the 1990s. Between the mid- 1980s and the mid-1990s the proportion rose from 5 to 8 per cent. In 2000 the proportion had risen by 5 percentage points to 13 per cent.

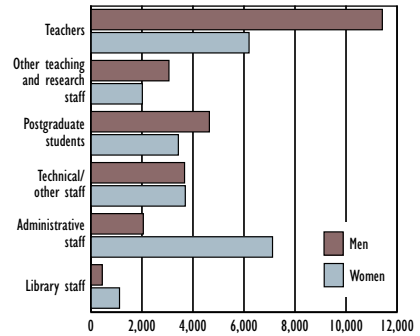


Fig.13. Number of year-equivalents at institutions of higher education 2000.

INTERNATIONAL PERSPECTIVE

Higher education has undergone rapid growth during the 1990s in the whole of the OECD area. Between 1990 and 1997 the total number of students increased by fifty per cent. This is made clear in the most recent issue of the OECD publication 'Education at a Glance' (EaG). In this respect Sweden is close to the average.

This section will present some of the indicators that have been developed over a ten-year period in the OECD project Indicators of Education Systems (INES). A large number of countries have participated in this project, which is based on network groups and other working groups. Since the beginning of the 1990s the results have been presented in 'Education at a Glance' and the most recent issue was published at the middle of June 2001.

Systematisation of educational statistics has been taking place since the mid-1970s through the International Classification of Education (ISCED). This was revised in 1997. The possibilities of comparing the educational statistics of different countries have improved considerably, particularly during the 1990s. Problems still remain, however, when it comes to the definitions of statistical variables, for instance, so that these comparisons must be used with caution.

In ISCED 97 undergraduate programmes have been classified as level 5 and postgraduate programmes at level 6. Level 5 is divided into levels 5A and 5B, with 5A referring to higher education programmes that are three years or longer and which lead to "professions with high skill requirements such as medicine, dentistry and architecture". Completed programmes at level 5A also qualify students for postgraduate programmes. Level 5B is used for higher education programmes that normally take from 2 – 3 years and can be characterised as "practically/occupationally specific programmes". It should be added that the division between 5A and 5B varies from country to country, which gives rise to problems in making comparisons.

THE COSTS OF HIGHER EDUCATION IN SWEDEN

When the resources for education and research are related to the gross domestic product (GDP) Sweden ranks high in many of the EaG indicators. Korea, USA and Canada are the OECD countries that have for many years allocated the largest proportion of their GDP to the higher education sector. The figure is 1.9–2.5 per cent. They are followed by Iceland, Sweden and Finland with 1.7–1.8 per cent. In calculating this indicator, resources for both education and research at universities and university colleges are taken into account. The indicator is therefore affected by the ways in which countries organise research funding. Countries where a great deal of research takes place within the universities and university colleges are ranked high, and vice versa. See figure 14.

For the first time the OECD is accounting for expenditure per student in a number of countries, divided between expenditure for education, research and ancillary services. This last figure includes student accommodation, for instance, which in some countries is funded through the higher education institutes. This indicator is interesting from Sweden's point of view as approximately half the expenditure in universities and university colleges is related to research and postgraduate courses. In other countries research and development activities (R&D) take place to a greater extent outside the higher education sector. Among the countries that have been able to submit information about this indicator, the USA, Canada and Australia have the highest educational expenditure per student. They are followed by Ireland, Denmark and Sweden, and these countries also have relatively high educational expenditure per student. See figure 15.

LARGE-SCALE EXPANSION OF HIGHER EDUCATION IN THE MAJORITY OF OECD COUNTRIES

Many countries have expanded their higher education during the 1990s. Between 1990 and 1997, on average, the number of students in higher education has increased by 50 per cent in the OECD countries. Sweden can be found at the country mean for this period. Since 1997 the number of students has continued to increase in many countries, but not to the same extent as during the first half of the 1990s.

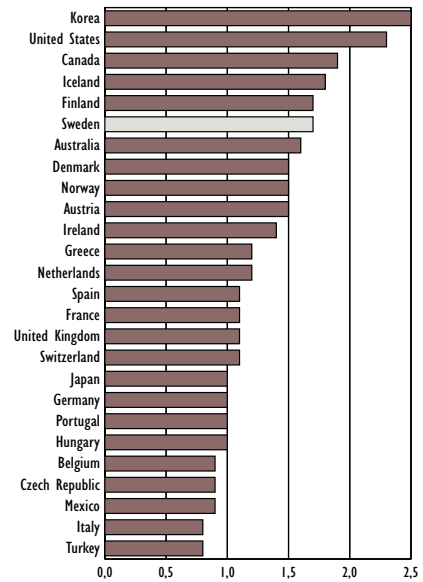


Fig. 14. Educational expenditure as a percentage of gross domestic product (GDP) for tertiary education 1998, per cent. Excluding study support but including expenditure for research at institutions of higher education.

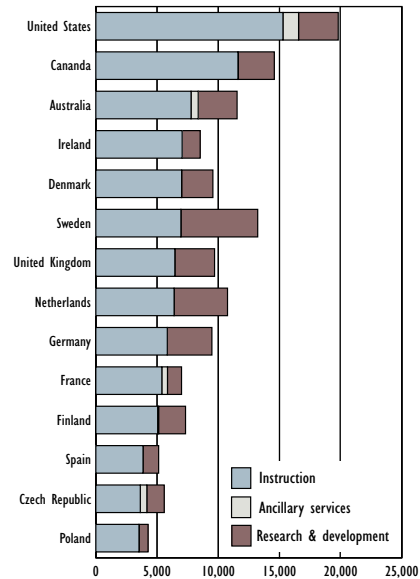


Fig. 15. Expenditure per student on instruction, ancillary services and research and development, 1998. US dollars converted using purchasing power parities (PPP).

There are major differences in the rate of expansion between various countries. To some extent these differences result from their initial circumstances in 1990. In the countries with a low rate of expansion during the 1990s, such as the USA, Germany and the Netherlands, large numbers were already going on to higher education in 1990 and they have retained and to some extent increased this high level. In other countries the rate of expansion has been very large. Portugal, Poland and Hungary more than doubled the number of students during the period but had a relatively low level to begin with.

MANY FIRST-TIME STUDENTS AT SWEDISH UNIVERSITIES AND COLLEGES

Sweden has a large number of students beginning higher education in relation to its population and if all ages are included. Only New Zealand and Finland have a higher proportion of first-time students. In Sweden this figure is 65 per cent, compared with an average of 45 per cent for the OECD countries. This is the percentage of first-time students in ISCED level 5A. The percentage is derived by totalling the relative frequency of beginners in every age group.

Together with Denmark and Iceland, Sweden has the highest median age for students beginning higher education – which is just under 23 in Sweden. In most countries the median age is around 20. Flemish-speaking Belgium has the largest proportion of young university beginners, where 80 per cent are under 20. In France and Italy first-time students are also young. Sweden provides a contrast to these countries with only 20 per cent of its first-time students under 20 and just over 20 per cent above 31. Norway, Denmark and Iceland also have a large proportion of older first-time students.

IN SWEDEN A 17 YEAR OLD CAN EXPECT 2.9 YEARS OF HIGHER EDUCATION

In EaG there is an indicator that expresses the number of years of higher education that can be expected. This is calculated by totalling the relative frequency of participation for each cohort aged 17 and older. This indicator provides a general measurement

of the volume of higher education and is affected by both the number of students in higher education and the length of programmes.

The average figure for the OECD countries is 2.5 years. In Finland, the USA and Korea a 17-year-old can look forward to 3.5–3.9 years of higher education and in Sweden 2.9 years. See figure 16.

If this indicator is calculated on the basis of the number of years of education a 5-year-old can anticipate, Sweden takes the lead with 20.3 years. Here the average figure for all countries is 16.7 years. In nearly every country women can expect a longer period of education than men. In Sweden women can look forward to 22.2 years of education and men to 18.6 years. The average figure for the various countries is 16.9 years for women and 16.5 years for men. There are, however, major differences between the countries. For instance, in Korea, Switzerland and the USA men can expect more years of education than women. The opposite is true of the Scandinavian countries and the United Kingdom.

LOW PERCENTAGE OF 19-20-YEAR-OLDS IN EDUCATION.

One aspect of the situation in Sweden that has attracted attention is that there are relatively few younger students in higher education. Among 20-year-olds in 1999, 22 per cent were pursuing higher education and 24 per cent studying at upper-secondary level. In Korea, Belgium and France the proportion of 20-year-olds in higher education was 42–53 per cent. A comparison of the proportion of 19-year-olds in education yields a similar result. See figure 17.

It is worth noting in this context that Sweden has 95 per cent of 18-year-olds in education, which is the highest figure among the OECD countries. But Sweden also has the largest drop in participation in education immediately after leaving upper-secondary school.

THE NUMBER OF DEGREES AWARDED VARIES CONSIDERABLY FROM COUNTRY TO COUNTRY

If the number of diplomas and degrees awarded in higher education (ISCED 5A) is related to total population at typical age of graduation, Sweden can be found somewhere around the middle of the list of countries. The average for all the countries is 24.6 per cent,

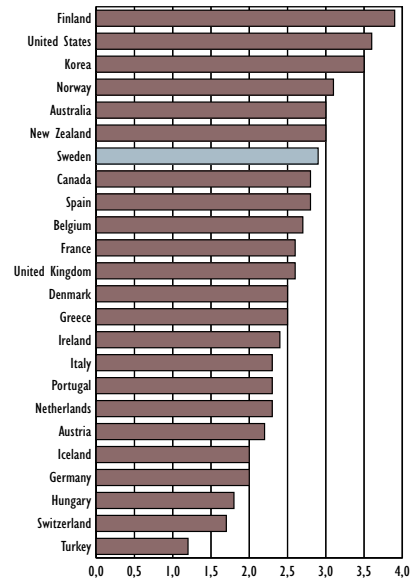


Fig. 16. Expected years of tertiary education for all 17-year-olds, 1999, (undergraduate education and postgraduate training).

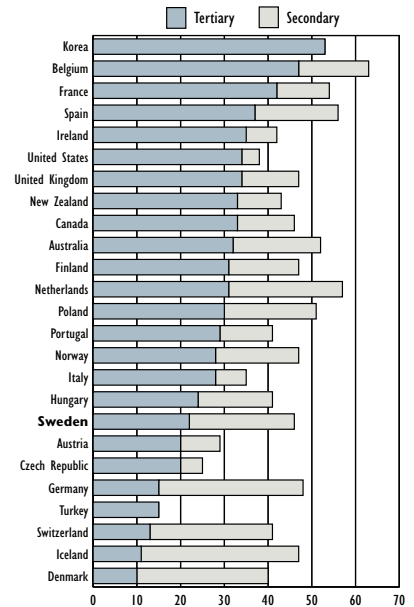


Fig. 17. Net enrollment rates at the age of 20 in public and private institutions, 1999.

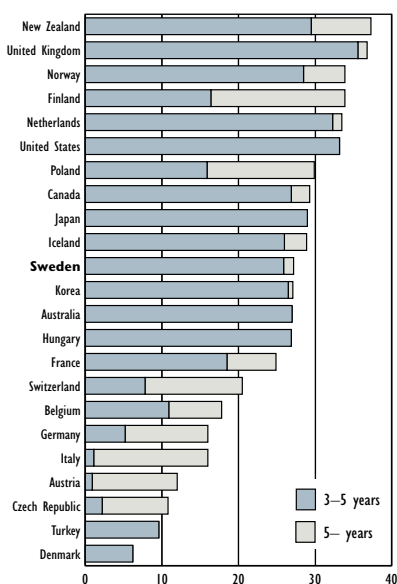


Fig. 18. Graduation rates in tertiary education, ISCED 5A first degree, 1999.

and for Sweden 27.2 per cent in 1999. In Norway and Finland the proportion is almost 34 per cent, while Denmark has the lowest figure of all. This is because in Denmark many programmes are classified as upper-secondary level that in other countries are considered to pertain to higher education. Germany and Italy also have a relatively low proportion at 16 per cent. See figure 18.

MANY POSTGRADUATE DEGREES IN SWEDEN

Together with Switzerland, Germany and Finland, Sweden takes pride of place for postgraduate degrees. For Sweden the percentage of postgraduate degrees compared to total population at typical age of graduation is 2.4 per cent. Austria, the United Kingdom and the USA also have a relatively high proportion of individuals with postgraduate qualifications.

SWEDEN HAS A HIGH PROPORTION OF DEGREES IN MEDICINE AND HEALTH SCIENCES BUT FEW IN THE SOCIAL SCIENCES

Norway and Sweden have the highest proportion of degrees in medicine and health sciences (ISCED 5A). On the other hand, Sweden has a relatively low percentage in the social sciences – 22 per cent compared to an average of 35. In engineering and the natural sciences the figure for Sweden is just over 27 per cent, which is somewhat above average while Korea and Finland are highest with 42 and 35 per cent.

SWEDEN LIES CLOSE TO THE OECD AVERAGE FOR SCIENCE AND ENGINEERING QUALIFICATIONS IN RELATION TO THE LABOUR FORCE

Sweden's emphasis on engineering and the natural sciences has led during the 1990s to twice as many individuals in the 25-34 cohort on the labour market possessing qualifications in these areas. This means that Sweden, which in 1992 was somewhere close to the bottom of the list in comparisons between countries, has now risen to the middle in 1999.

Other countries have also placed great emphasis on these disciplines. In New Zealand the number of such qualification has increased threefold. Like Sweden, Spain has doubled the number

and in Finland it has also risen a great deal. On the other hand in Germany and Japan there has been only a slight increase and the figures for the Netherlands are lower in 1999 than in 1992. See figure 19.

SWEDEN HAS A WELL-EDUCATED POPULATION

Three quarters of the Swedish population have at least completed upper-secondary programmes, which places Sweden in the top third of the scale for the OECD countries.

In Canada 39 per cent of the population have a university education, which is the highest figure for these countries. Sweden can be found in fifth place with 29 per cent. These statistics include all university programmes, i.e. ISCED levels 5B, 5A and 6. See figure 20.

Comparison of levels 5A and 6, or in other words, university programmes in Sweden that are three years or longer and postgraduate programmes, gives a somewhat worse result for Sweden. Here Sweden can be found in the middle of the scale, with 13 per cent compared to the average of 14 per cent for all the countries.

Sweden has a lower proportion of young people with university education of three years or longer than many other countries. On the other hand, older age groups have more education.

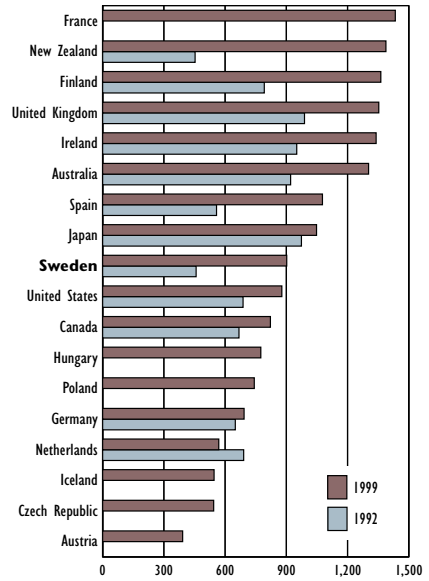


Fig. 19. Number of science graduates per 100 000 persons in the labour force 25–34 years of age, 1992 and 1999.

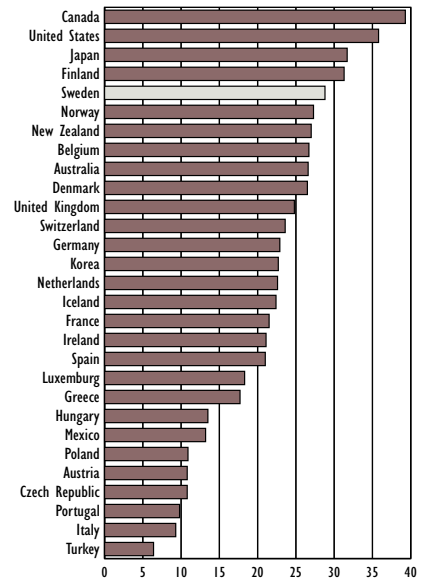


Fig. 20. Percentage of the population that has attained at least tertiary education, 1999.

FACTS ABOUT THE HIGHER EDUCATION SECTOR

Students	Academic year 1999/2000	Proportion of women 1999/2000
New higher education students	70,100	58 %
Registered undergraduates	319,100	60 %
Undergraduate degrees	39,200	60 %
	Fiscal year 2000	Fiscal year 2000
New postgraduate students	3,100	45 %
Active postgraduate students	18,100	43 %
Doctoral degrees	2,200	39 %
"Licentiate" degrees	1,000	37 %
Total full-time equivalent (FTE) students	262,200	58 %
Total annual performance equivalents for students	218,000	58 %
Staff		
Staff (FTE) at state, regional authority and private universities and university colleges	48,900	48 %
of which teaching personnel	22,800	36 %
Proportion of professors, senior lecturers, junior lecturers and postdoctoral fellows with doctoral degree	55 %	25 %
Costs (M SEK)		
	Fiscal year 2000	
Total higher education cost	43,700	
of which		
State universities and university colleges	33,700	
Private universities and university colleges	2,800	
Student financial support	6,700	
Central government agencies	500	

UNIVERSITIES AND UNIVERSITY COLLEGES IN SWEDEN

UNIVERSITIES AND INSTITUTIONS OF HIGHER EDUCATION WITH THE RIGHT TO AWARD POSTGRADUATE DEGREES

STATE

Uppsala University
Lund University
Göteborg University
Stockholm University
Umeå University
Linköping University
Karolinska Institute
Royal Institute of Technology
Luleå University of Technology
The Swedish University of Agricultural Sciences
Karlstad University
Växjö University
Örebro University
Blekinge Institute of Technology
Kalmar University College
Malmö University College
Mid-Sweden University College
Mälardalen University College

PRIVATE SECTOR

Chalmers University of Technology
Stockholm School of Economics
Jönköping University College

UNIVERSITY COLLEGES

STATE

Borås University College
Dalarna University College
Gotland University College
Gävle University College
Halmstad University College
Kristianstad University College

Skövde University College
Stockholm University College of Physical Education and Sports
Stockholm Institute of Education
Södertörn University College
Trollhättan/Uddevalla University College

PRIVATE SECTOR

Erica Foundation
Ersta Sköndal University College
Gammelkroppa School of Forestry
Johannelund Theological Institute
Stockholm School of Theology
Örebro Theological Seminary

UNIVERSITY COLLEGES OF ARTS

STATE

University College of Dance
University College of Film, Radio, Television and Theatre
University College of Arts, Craft and Design
Royal University College of Fine Arts
Royal University College of Music in Stockholm
Stockholm University College of Opera
Stockholm University College of Acting

REGIONAL AUTHORITY

Ingesund College of Music

PRIVATE SECTOR

University College of Music Education in
Stockholm

UNIVERSITY COLLEGES FOR HEALTH SCIENCES

REGIONAL AUTHORITY

Jönköping University College of Health Sciences

PRIVATE SECTOR

The Swedish Red Cross University College of Nursing and Health
Sophiahemmet College of Health Sciences

The National Agency for Higher Education is a central agency responsible for matters relating to institutions of higher education. Its tasks include quality assessments, supervision, reviews, development of higher education, research and analysis, evaluations of foreign education and provision of study information.