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ABSTRACT

This monograph examines the state of higher education in Norway. Fifteen chapters cover: (1) "The Norwegian Background"; (2) "The Educational System"; (3) "Institutional Units of Higher Education"; (4) "The Financing of Higher Education"; (5) "The Administrative Structure"; (6) "The Teaching and Research Staff"; (7) "Structure and Content of Course Programmes"; (8) "The Students"; (9) "Foreign Students in Norway"; (10) "Graduates"; (11) "Research Activities"; (12) "Student Social and Financial Benefits"; (13) "International Cooperation within Education"; (14) "Libraries and Reference Services"; and (15) "Annexes," which includes the names and addresses of government educational offices, universities, colleges, regional boards of higher education, national education councils, research libraries, student unions, and student welfare organizations. (MDM)

HIGHER EDUCATION IN NORWAY

CEPES

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CEPES is the acronym for CENTRE EUROPEEN POUR L'ENSEIGNEMENT SUPERIEUR (European Centre for Higher Education). It is an integral part of the UNESCO Secretariat, with headquarters in Bucharest.

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HIGHER EDUCATION
IN
NORWAY

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and Church Affairs

Compiled by

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edited by
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PREFACE

This eighteenth volume in the CEPES monograph series on European higher education systems is in fact a revision of the third volume which was published in 1983. Far from being a mere updating of the earlier version, it is a completely rewritten text on Norwegian higher education.

Higher education as a distinct system, rather than as a set of isolated institutions located in one country, came into being in Norway after the Second World War. The system has been evolving ever since and in the process has acquired characteristics that in addition to being typically Norwegian, suggest the German and the Anglo-Saxon traditions of higher education and a specifically Scandinavian model. Although the system is centralized, most of the institutions composing it, falling under the sway of the Ministry of Education, Research, and Church Affairs, institutional autonomy is being increasingly encouraged, and although the system as a whole gives the appearance of being quite hierarchical, it is characterized by a great deal of institutional equality, in terms of the working conditions and the salaries of teaching staff members, regardless of the types of institutions in which they work and by both the recruitment of students and their movement from one type of institution to another.

Much space has been given to changes which have occurred over the last six years. Various reform proposals have strengthened the role of short-term higher education and in general have aimed at increasing the links between higher education and vocational orientation. Administrative structures and methods have been modified. The ramifications of the newly adopted Higher Education Act of 1990 are detailed as is also the working of the system of regional boards for the various regional colleges. The role and scope of research have been both strengthened and diversified. Like in many other countries, institutions have been encouraged to forge links with industry. Numbers of regional science parks and competence centres have been created.

In short, this monograph describes the operation of a progressive and dynamic system of higher education that offers many models and examples to the rest of the world.

CEPES would like to express its gratitude to the Norwegian author and to the Norwegian Ministry of Education, Research, and Church Affairs for assuming the costs, thereby making as substantial contribution to this series.

CARIN BERG

Director of CEPES

1. THE NORWEGIAN BACKGROUND

1.1. Geography and Public Administration

The population of Norway is small, but its land area is large. Approximately 4.2 million people have at their disposal an area of 324,000 square kilometres, more than, for example, the area of Great Britain. The straight distance from one end of the mainland to the other is 1,752 kilometres. The country consists of innumerable fjords, islands, and extensive mountainous areas.

Most people live along the coast. Even if more recently the marked trend has favoured the concentration of the population, small local communities are still frequent. According to the census of 1960, 43 per cent of the population lived in areas of scattered settlement, defined as communities numbering fewer than 200 inhabitants. This proportion had declined to 34 per cent in the 1970 census and to 29 per cent in the 1980 census.

Oslo, the capital, is the residence of the King and the seat of government and Parliament (**Storting**). The most important centre of trade and culture in Norway, the city of Oslo, has roughly 450,000 inhabitants.

The gradual change in the pattern of settlement in Norway runs parallel to changes in the economy. Tertiary sectors grow, while primary sectors decline. In 1972, 12 per cent of the working population were found in the primary sectors, 34 per cent in industry, and 54 per cent in the services sector. In 1980, the services sector claimed 63 per cent of the work force; industry, 29 percent; and the primary sectors, only 8 per cent. Corresponding figures for 1988 were 68 per cent in services, 26 per cent in industry, and 6 per cent in the primary sectors[1].

Administratively, the country is divided into nineteen counties and 448 municipalities, of which 47 are classed as towns. The municipalities have autonomy with regard to many questions based on legislation approximately 150 years old. They raise their own taxes, and these cover a major part of their activities, primarily in education, social and health services, roads, water supply, sewage systems, etc. There are, however, major differences among the municipalities in terms of their fiscal capacity, and to a considerable extent such differences are compensated for by an extensive and selective system of transfers from the central government to the municipalities.

[1] *Source:* The Central Bureau of Statistics, **Labour Force Sample Surveys.**

The municipal council is the highest political body at this level, consisting of representatives of the various political parties in proportion to their respective local strength. Representatives are elected for four-year terms. Each municipal council elects its mayor and appoints special committees for the different services, including the municipal school board. Even this body is composed according to the strength of the local political parties.

While municipalities may vary in terms of population from about 1,000 inhabitants to nearly half a million, with a majority having between 2,000 and 20,000 inhabitants, the populations of counties range from somewhat less than 100,000 to nearly half a million. The highest political body within a county is the county council. Direct election of the members of the county council was introduced as of 1975. In recent years, the counties have gradually increased the scope of their activities. Presently, they play important roles in the fields of health services, transportation, and upper secondary education.

Nationally, political power is invested in Parliament (Storting). Its 165 members are elected for four-year terms. Every Norwegian citizen over eighteen years of age is entitled to vote and can be elected. Women have had the vote since 1913, and the law lays down full equality between the sexes. Dr. Gro Harlem Brundtland became the first female Prime Minister of Norway in 1981, and when she again formed a Government in 1986, she made history by ensuring that women held almost half of the ministerial posts (8 out of 18). The recent Conservative government continued this trend. When Gro Harlem Brundtland returned to office, forming her third government in November 1990, nine out of nineteen Cabinet members were women.

Parliament has only one house, but it has a separate section for legislation. All other decisions are taken in plenary session. Legislation and financial appropriations are prerogatives of the Storting. Parliamentary Government, which has been established in Norway since 1884, ensures strong political powers for the Storting (including fairly detailed supervisory functions in relation to the Government).

Widespread public involvement is a typical feature of Norwegian society having its background in historical, geographical, and political conditions. The scattered population necessitates extensive public engagement in the provision of services which in other countries are privately organized. In addition, long-standing emphasis on public responsibilities for the equalization of individual conditions has been an additional cause for strong public involvement in the provision of cultural, social, and economic services.

A special feature during the last years has been a trend in favour of the greater decentralization of educational authority from the ministry to regional/local education authorities in the case of primary and secondary education. This feature has now been applied even to the financing of education.

A new sector grant system was put into effect as of January 1986 by the terms of which municipalities and counties receive one lump sum from the

state covering subsidies for education, for culture, and for health services. As a consequence of the new system, the local and regional authorities will have improved possibilities for planning their economies within the given frameworks, and the central authorities will no longer have the same control over education expenditure at the local and regional levels as in the past. At the same time, as it is essential that the central authorities balance the policy objective favouring greater local autonomy with the need to ensure equal standards throughout the country, some direct state subsidies and special provisions have been maintained.

Table 1

Gross Domestic Product by Industry in Millions of Kroner

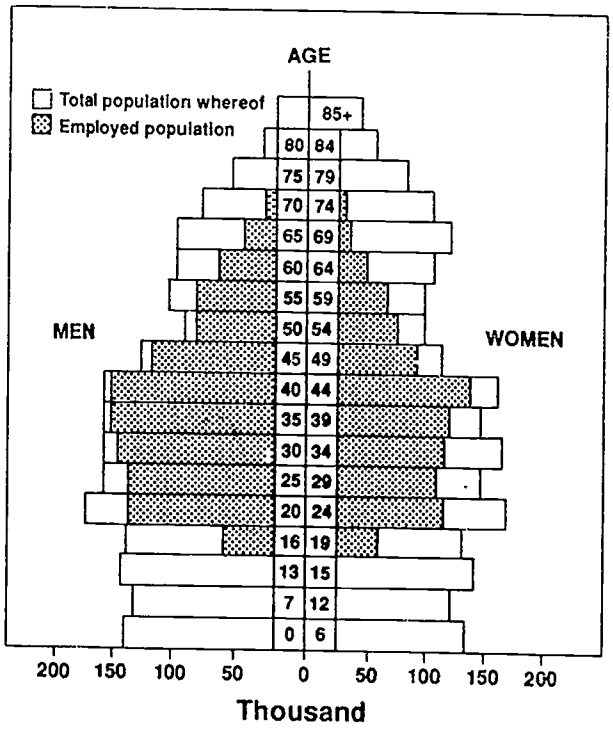
Running prices	1985	%	1989	%
Gross domestic product	**500,200**	**100**	**622,991**	**100**
Industries	**391,297**	**78,2**	**486,631**	**78,1**
Agriculture, forestry,fishing, etc.	15,150	3,0	17,616	2,8
Oil activities	92,694	18,5	76,951	12,4
Manufacturing, mining and quarrying	71,431	14,3	92,132	14,8
Electricity supply	17,797	3,6	24,291	3,9
Construction	23,221	4,6	31,514	5,1
Wholesale and retail trade	47,298	9,4	62,461	10,0
Ocean transport and oil well drilling	13,753	2,7	16,266	2,6
Transport and communication	25,084	5,0	37,709	6,0
Dwellings	18,105	3,6	28,642	4,6
Financial services	16,625	3,3	28,534	4,6
Other industries	50,139	10,0	70,517	11,3
Producers of government services	**67,965**	**13,6**	**97,928**	**15,7**
Producers of central government services	21,139	4,2	29,486	4,7
Defence	5,751	1,1	7,760	1,2
Education and research inst.	4,026	0,8	5,757	0,9
Health and social welfare services	1,343	0,3	1,792	0,3
Others services	10,019	2,0	14,178	2,3
Producers of local government services	**46,826**	**9,4**	**68,442**	**11,0**
Education and research inst.	15,596	3,2	22,253	3,6
Health and social welfare services	22,100	4,4	32,573	5,2
Others services	9,130	1,8	13,616	2,2
Correction items*	**40,939**	**8,2**	**38,433**	**6,2**

Sources: NOS National Accounts Statistics.

* Import taxes, value added tax, investment levy, correction for imputed bank service charge.

Figure 1

Total population and employed population (16-74 years) by sex and age: Average 1988.



1.2. History

Norway was united by the Viking ruler, King Harald Fairhair, at the end of the ninth century A.D. During the late Middle Ages, however, Norway came under Danish rule and did not acquire its own constitution until 1814. The country then became a kingdom united with Sweden, a union which was dissolved in 1905.

Norwegian society may probably be characterized by fewer social and cultural class distinctions than many other societies. Culturally, the country is fairly homogeneous, largely sharing a common history and language[1].

The common basis is a popular culture with its roots in traditional rural society. There is hardly any privileged economic upper class in the European sense. Nobility has been practically non-existent, and since medieval times, the farmers have largely maintained their independence and the ownership of their farms, in spite of extreme poverty.

Historically, the egalitarian tradition in Norwegian society may simply have its origin in the poor economic conditions of the country. For many centuries, it was isolated and lacked the resources needed to support an upper class. Farms were numerous and small. Even if rural society had its social ranking, poverty was the lot of most people.

Wealth was first accumulated through industrial development, the latter gaining momentum only relatively late in the European context, through the expansion of industry and shipping. In recent years, the exploitation of substantial oil resources has significantly influenced the structure of the Norwegian economy.

Although there has been a marked increase in immigration from various parts of the world in recent years, the country has had no distinctive ethnic or cultural minorities apart from the relatively small Sami population (the Lapps), estimated at approximately 20,000 to 30,000 people. They have their own language and their distinctive culture which is centered mainly in the northernmost county, Finnmark.

It is also worth mentioning that Norway was the last country in Europe to acquire a printing press, doing so 200 years after Gutenberg developed his press. Today, statistics indicate that Norwegians read more books than people in most of the other European countries.

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[1] The common language, however, is divided into two branches, **bokmål** and **nynorsk.** The proper balance to be accorded to the two versions of Norwegian is the subject of considerable debate and requires special efforts with regard to educational and cultural policies.

1.3. Religion

Norwegian society is strongly rooted in the Protestant Lutheran tradition. The Constitution of 1814 decrees that "the Evangelical Lutheran religion is to be the official religion of the State". Nearly ninety percent of the population belong to the Evangelical Lutheran Church of Norway; the rest belong to other denominations or have no declared religious affiliations.

2. THE EDUCATIONAL SYSTEM

2.1. General Principles

Education is given high priority within public activities in Norway. Figures for 1989 indicate that public expenditure on education[1] amounted to about NOK 43 billion, or 6.9 per cent of GNP. In 1988, public expenditure on education amounted to some NOK 40 billion, or 6.8 per cent of GNP. In 1986, the corresponding figures amounted to about NOK 32 billion, or 6.3 per cent of GNP. This figure may be compared to 6.2 per cent of GNP in 1973 and 5.6 per cent in 1965. In 1989, about 57 per cent of the total education budget is funded by the central government and 43 per cent, by local authorities, i.e. municipalities and counties.

Out of the total population, nearly 900,000 are teachers, students, or pupils. In addition, a large number of adults take part in adult education courses every year. In 1989 there were about 484,000 pupils in the 7-to-16 year-old group in compulsory education, about 220,000 students in upper secondary education (including apprenticeship training), and approximately 125,000 students at post-secondary level.

Public education is free. Compared to other countries, Norway has few private schools and no specific private school tradition, except for a system of "peoples' high schools" (**folkehogskole**), characteristic of the Scandinavian countries.

The overall objective of Norwegian educational policies is to provide equal opportunities for all, irrespective of social, cultural, and economic background, and to offer an education adapted to the abilities of the individual. This objective is specifically expressed in various school acts.

The last decades have witnessed a comprehensive process whereby the Norwegian education system is being extended and restructured at all levels.

In 1920, Norway was the first country in Europe to introduce comprehensive education through age fourteen. In 1969, compulsory education for nine years superseded the old seven-year elementary school, and in the 1970's and 1980's, extensive reforms were carried out within upper secondary and higher education. Upper secondary education was made available for everyone.

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[1] Defined by function according to COFOG.

In increasing the number of places in schools, one of the objectives has been to co-ordinate general and vocational training in one comprehensive system and to give equal status to practical and theoretical education. Somewhat more than ninety per cent of the youngsters who complete compulsory education now continue to the upper secondary level, and the number of sixteen-year-olds applying for admission to upper secondary education is increasing. One of the consequences has been the expansion of higher education institutions, especially regional colleges, and the considerable increase of student numbers at this level over the last ten to fifteen years. In collaboration with the institutions of higher education, the Ministry of Education, Research, and Church Affairs is now endeavouring to solve the problems that have followed in the wake of a recent, unforeseen increase in student numbers. The aim is to avoid even greater quantitative restrictions with regard to admissions to these institutions. However, this aim is faced with substantial difficulties.

2.2. Organization and Structure

Through legislation and plenary decisions, the Storting defines the overall aims of the schools and the institutions of higher education. It lays down their structure and organisation, the responsibilities for running them, and their sources of funding. The administrative responsibility for running the primary and lower secondary schools rests with the municipalities, while the counties are responsible for upper secondary education. The state is directly responsible for the universities and for most of the other institutions of higher education.

Since January 1990, the Ministry of Education, Research, and Church Affairs is responsible for all public education with the exception of tertiary level education within the agricultural, the veterinary, and the military sectors.

Research policy is another of the main areas of responsibility of the Ministry. The tasks include co-ordination of the government's research policy and administrative and budgetary responsibility for several research councils and research institutes.

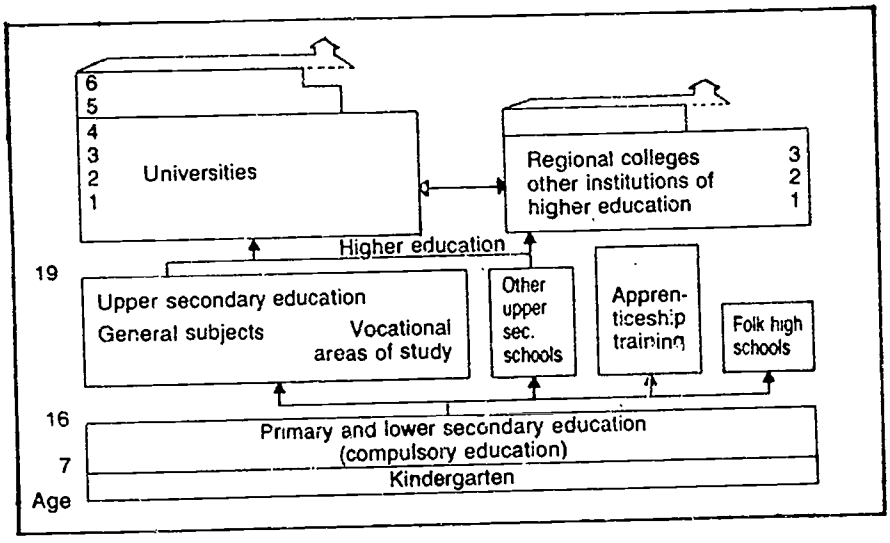
In dealing with education, the Ministry takes into account the professional advice of various national councils and bodies. At present, there are councils for the various types of education and training, including a Sami Education Council which advises on matters of educational provision and curricula for the Sami population. Due to the many national councils and ad-hoc bodies in the school sector, the relationship between the Ministry of Education, Research, and Church Affairs and the advisory councils/bodies is being revised. The revision might lead to a reorganization of the administrative structure at central level.

From 1982 to 1990, there were two ministries for education, one dealing with primary, secondary (7 to 19), and adult education; the other dealing with higher education.

Pre-school education is under the authority of the Ministry of Children and Family Affairs.

Figure 2

Typical Paths through the Norwegian Education System



2.3. Primary and Lower Secondary Education

Provisions relating to compulsory elementary education have existed in Norway for 250 years (since 1739). Seven years of schooling were made compulsory for all children as early as 1889. At first, there were different provisions for urban and rural areas. The Education Act of June 1969 concerning primary and lower secondary education gave all Norwegian children the same statutory right to nine years of schooling. A revision of the Act in 1975 stated that handicapped children as far as possible should be integrated into the regular schools.

A Norwegian child begins school in the autumn of the year when he reaches the age of seven. The nine-year compulsory school is divided into two stages: the **Primary stage:** Classes 1-6 (age 7 to 13) and the **Lower secondary stage:** Classes 7-9 (age 13-16).

In a White Paper submitted in April 1989 on the Norwegian educational policy, the Government proposed that schooling be started gradually at the age of six. If this proposal is carried through, it will lead to an extension of compulsory education to 10 years.

Because the view held in Norway is that children should attend school without having to leave their families, large numbers of small schools

have been opened in remote and sparsely populated areas. About one-third of the primary schools, approximately 1200 of them have more than one age group in each class. Some of them having as few as 6 pupils are ungraded; i.e., all pupils are together in the same classroom irrespective of age. There is also a close link between the primary and the lower secondary stages. More than 1000 out of 3500 schools are combined, providing primary and lower secondary schooling in the same building.

As the result of a reduction in the birth rate, the number of pupils in compulsory education decreased during the 1980's. In 1987-1988, the average number of pupils per class in primary school was about 18, and in lower secondary school, approximately 23.

Compulsory education is completely comprehensive. Each class is kept together as a heterogeneous unit at least from the first through the sixth grades and in many cases even through the ninth grade. The class is regarded, both socially and educationally, as an important unit. A class teacher is responsible for each class. As Norwegian primary school teachers are not specialized in one particular grade, class teachers remain with the same group for three, or more commonly, for six years. At the primary stage, the use of subject teachers is kept to a minimum. The main approach is individual differentation within mixed-ability classes, the schools being required to make sure that pupils are offered instruction suited to their abilities. Classes are not repeated.

2.4. Upper Secondary Education

Upper secondary education normally enrolls young people within the sixteen-to-nineteen-year-old age group corresponding to the period from the tenth through the twelfth year of education and training. It consists of general and vocational education and apprenticeship training.

2.4.1. General and Vocational Education

The Act of 21 June 1974 concerning upper secondary education (implemented in 1976) entailed the coordination of all training in general and vocational subjects in one comprehensive system. General and vocational studies are now, for the most part, offered side by side in the same individual schools and can even be combined within individual course programmes. At present, ten areas of study are offered. These in turn are divided into a number of branches. Due to structural reforms, the division of General Subjects into branches has been abolished as of the 1990-1991 academic year. Special study area subjects are replacing the former branch subjects.

All areas of study have the same basic structure: foundation courses of one or two years and advanced courses of one or two years.

The two-year vocational foundation courses have a common core of general subjects covering almost half of the timetable regardless of study area. The remainder of the teaching periods are concentrated on either basic vocational training, aesthetic subjects, physical education, or other subjects. Advanced courses imply specialization. For pupils having chosen vocational subjects, the two-year foundation course will be equivalent to one year of apprenticeship. Graduates can enter employment or apply for a place in the advanced vocational training sector. In the area of general subjects, the normal course of study is a one-year foundation course followed by a two-year advanced course. To this area has been added a newly designed course in computer technology (one + two years).

2.4.2. Apprenticeship Training

Apprenticeship training is regulated by a separate Act of 1980. It is based on close co-operation between schools and places of employment. The future apprentices may complete the first or second year in upper secondary school and finish their training with, respectively, two years or one year of apprenticeship.

The development of the system of apprenticeship training has been a key aspect of the government policy to provide co-ordinated theoretical and practical education and training. Its aim is also to provide skilled workers in the various crafts and industries and to reduce unemployment among young people. Various measures to stimulate different firms, companies, and other public or private bodies to receive apprentices have been adopted. Trade unions have also encouraged experienced workers to qualify for examination within a craft or an industry. The 1980's witnessed an increase in the number of apprenticeship contracts and the number of workers passing craft examinations. Thereafter, the number of apprenticeship contracts has decreased.

2.5. Higher Education

The Norwegian system of higher education is primarily based on four full universities, on six specialized colleges having university status, and on a large number of smaller colleges, most of them organized under the authority of seventeen county-based boards. These institutions form a rather heterogeneous group as regards the kinds and the duration of the education offered, the organization of teaching, and their administrative structures.

Public and private institutions of higher education in Norway today number approximately 240. Although ten institutions have more than 1,000 students each and enroll half of the total number of students, most of these institutions are quite small, three-quarters of them having fewer than 400 students, and several having fewer than 200. This is particularly the case of the approximately 70 privately-owned institutions many of which are small branches of Oslo-based institutions.

In 1989, the total number of students in higher education was approximately 125,000, including some 20,000 students enrolled in private institutions. About 5,000 foreign students are studying in Norway, while some 7,000 Norwegians are studying abroad.

Norway's first university was founded in Oslo in 1811. When the new university opened its doors, it had a student enrollment of seventeen and a teaching staff of six. It remained the only university in Norway until after World War II. In 1989, it had nearly 26,000 students. The Universities of Bergen and Trondheim each have about 12,000 students, while the newest university, founded in Tromsø in 1968, numbers about 3,500 students. Although these universities offer most of the traditional fields of study (with some exceptions for the University of Tromsø) there is a tendency in favour of specialization. The University of Trondheim, for instance, is the central institution for technology in Norway. As this university has special educational and scientific programmes to address the problems of northern Norway, it has become a national centre for fishery and arctic studies. It should also increase the supply of qualified academic manpower in this part of the country.

The other traditional colleges with university status specialize in agriculture, veterinary medicine, physical education and sports, business administration, and economics and theology. The advanced colleges of architecture, arts, and music should also be included in this group. Questions of geography and of history have prevented the integration of these institutions into the full universities.

Student numbers have increased rapidly in recent years. First, the non-university sector was affected and then, quite recently, so was the university sector. New institutions have been established, and existing ones have been expanded. Furthermore, some institutions have been upgraded from the secondary to the postsecondary level. In the second half of the 1970's, in line with a less restrictive concept of research, existing colleges for teacher training, engineering, and social work were classified as higher education institutions and recognized as parts of the national research system. In 1981, several types of institutions for health education were upgraded as was also the case in 1982 for maritime education and the regional branches of the Norwegian School of Management, a private institution.

The most recent kind of non-university institutions to be established are the regional colleges in fourteen of the nineteen counties. A regional college is one of several possible kinds of non-university institutions having common regional steering boards.

For the most part, the non-university institutions offer programmes running for two or three years. Longer courses and graduate programmes have also been introduced at some of the institutions. Most programmes are oriented towards specific professions, their graduates becoming professional or paraprofessional personnel in such areas as teaching (in pre-schools and at the compulsory school level), engineering, social work, administration, econo-

mics, electronic based data, the health professions, libraries, journalism, etc. Higher education for military personnel is also included in these categories.

Initially, the regional colleges offered professional courses in areas not covered by other institutions. Then, to a limited extent, they began offering undergraduate level university course programmes. These course programmes usually run for two or three years with possibilities for combining subject areas so as to include other elements of higher education. Arrangements for mutual transfer between universities and regional colleges have gradually developed.

While the universities have traditionally devoted a fairly high percentage of their resources to research, the non-university institutions originally had no such function. Gradually, however, many institutions in the regional system of colleges, and especially some of the larger regional colleges, have developed extensive research activities, often connected to specific problems of their regions. In addition, regional research foundations have established links with the regional colleges and the boards of regional colleges.

At many of the institutions mentioned above, special emphasis has been placed recently on higher education and research related to environmental questions, this to follow up the Report of the World Commission on Environment and Development.

2.5.1. Recent Reform Plans

Developments over recent years, during which the regional colleges have become alternatives to the traditional universities, have weakened the distinctions between university and non-university institutions. The expanding cooperation between the universities and the regional colleges and the counties has become particularly important with regard to graduate and Ph. D. programmes. In 1989, approximately 55 per cent of all higher education students in Norway were enrolled at one of the non-university colleges. This proportion signifies that most of the fairly large increases in student numbers over the last two decades have taken place within the regional college system.

A White Paper on higher education, prepared by the Conservative government in 1984, and addressed to Parliament, recommended a policy of institutional consolidation. No new public institutions were to be established, and some integration of existing institutions was to be encouraged. A White Paper by the former Labour government, presented in 1986, confirms this general direction of policy. The parliamentary debate on the two White Papers in April 1987 indicate some reluctance to fully endorse this principle.

Many reasons could be found for introducing major structural reforms such as the establishment of new kinds of institutions and the upgrading of others so as to cope with changing and increasing demands for education. A desire to have institutional and geographical decentralization and to further the democratization of higher education were two of the principal motives behind the Government's decision to establish new types of institutions.

The proportion of young people seeking higher education began to increase considerably some time ago. In 1965, 19.5 per cent of the nineteen-year-olds passed the examination for the general certificate of secondary education (advanced level). About 7.5 per cent of this age group sought some type of post-secondary education. The universities lacked the capacity to absorb the growing number of students in a satisfactory way. At the same time, 57 per cent of the students in higher education were concentrated in Oslo.

Furthermore, there seemed to be an imbalance between university education and short-term higher education. Although existing short-term higher education institutions were dispersed throughout the country, the demand for new post-secondary level institutions outside the university centres was growing.

The opening of new types of institutions of higher education, such as regional colleges, also seemed to be a means to stimulate development in post-war industrial society in Norway which had created new types of jobs requiring new kinds of education. In a relatively short time, the social structure had changed. There was a growing need for manpower in, for instance, industry and commerce, with qualifications obtained from a more vocationally oriented higher education.

After a trial period, it appears that the aims of the Government have to a large extent been reached, and that the regional colleges are not only here to stay but also that they are competing effectively with the universities in terms of student and staff recruitment. There is clear evidence that the localization of institutions of higher education has not only revitalized the local economy but has also contributed to the availability of qualified manpower in remote regions, as well as to the ability of such regions to maintain their own qualified manpower. The development of the regional college system has been one of the important contributions to the provision of equal access to post-secondary education, irrespective of social background or economic status.

In a White Paper on Higher Education written during the 1986-1987 period, the Government suggested the creation of a commission to take stock of the situation and to outline a new set of long-term perspectives for higher education in Norway. The resulting Royal Commission on Higher Education and Research which was established in October 1987 was given a time-limit of one year in which to reassess the qualitative and quantitative objectives of higher education in Norway through the years 2000 to 2010; the functions of institutions of higher education with regard to education and research; the organizational structures and systems of leadership and decision-making within institutions as well as the patterns of institutional co-operation; and the allocation of resources to and within institutions of higher education.

The Commission report, which was submitted to the Ministry in 1988, presents a systematic, integrated, and energetic programme of reform. The central issues in the recommended 350 point-programme are the following:

- development of "Network Norway" connecting large and small institutions of higher education and research in a communications and co-operation network. The object of the network model is to create a structural framework for:
- the furtherance of necessary specializations and consolidation in order to ensure quality;
- the clarification of functions; the stimulation of co-operation among institutions; and the possible amalgamation of small and related institutions;
- the organization and the co-ordination of postgraduate study programmes and of research activities;
  - increased inter-institutional mobility;
  - the development of distance education;
- concentration on efforts to recruit students and staff to higher education, particularly into postgraduate studies and into basic research;
- increased backing for the leadership of institutes and greater emphasis on improved administrative systems and practices; increased decision-making powers and responsibilities for the operative units;
- increased appropriations of resources for higher education, particularly for postgraduate studies and basic research, for international exchanges of students and of scientists, and for the student aid system.

The Government has already followed up some of these recommendations with action on a wide range of issues and in different contexts. For example, a new Act on university administration and the seting up of university boards aims at increasing both the efficiency and the autonomy of the boards in question with regard to the central authorities. The Act went into force on 1 January 1990. Another new act has mandated the establishment of so-called research academies within the universities intended to organize and to co-ordinate postgraduate studies and research using the network model and its framework.

During the Spring of 1991, the Government will present a white paper on the Report on Higher Education with the intention of pursuing several of the most important issues which it raises. These will probably include criteria for admission to Norwegian colleges and universities; the structure of course programmes, degrees, and titles; policies concerning the employment of academic staff members; statistics on higher education; and the conditions for co-operation among institutions of higher education (the network model). The leader of the 1987 to 1988 Royal Commission on Higher Education and Research, Professor Gudmund Hernes, became Minister of Education, Research, and Church Affairs in November 1990.

A Royal Commission on Teacher Training was also set up in 1987 and given one year to review the recruitment situation in teacher education; to assess the standards of qualification required of teachers at different levels in the school system; and to examine the need for reform in teacher education.

The following are some of the central issues that are considered in the White Paper on teacher training which was presented by the recent non-socialist government:

- prolongation of the duration of general teacher training from three to four years;
- diversified teacher training curricula which place increased emphasis on certain basic subjects: first language, communication, and environmental studies in all types of teacher education; compulsory mathematics in the courses for general teachers; and competence in two subjects for vocational school teachers.

The Labour Party Government which came into office in November 1990 immediately withdrew this White Paper. The questions pertaining to the development of teacher training will instead be treated as an integrated part of the White Paper on Higher Education which will be debated in Parliament in early 1991.

2.5.2. Other Forms of Higher Education

Higher education, offered by major branches of public utilities, private branch organizations, and large companies should also be mentioned. It does not represent a large portion of the available higher education in Norway. Because of the importance of some of the subjects which it covers, its duration, and its organizers, it may be accorded some public support.

2.6. Adult Education

Adult education also expanded in the 1960's and 1970's. The Adult Education Act, which recognized the central role of this kind of education in the Norwegian education system, was adopted in 1977.

Table 2
Distribution of Full- and Part-Time Students in Various Fields in Higher Education Institutions in 1989

Name of Institutions	Theol.	Hum.	Law	Soc.Sc.	Econ. Adm.	Teach. Tr.	Nat. Sc.	Eng.& Arch	Med., Health Care	Dent.	Soc. Work	Libr.	Music	Arts, Crafts, Design	Phys. Educ.	Fish, Agric.& Forest.	Others	%
Ministry of Education, Research, and Church Affairs:																		
University of Oslo	x	x	x	x	x	x	x	x	x	x			x					20.2
University of Bergen		x	x	x	x	x	x	x	x	x								9.3
University of Trondheim		x		x	x	x	x	x	x		x				x			9.1
University of Tromso			x	x	x	x	x	x	x							x		2.4
The Norwegian School of Economics and Business Administration		x[1]			x													1.3
The Oslo School of Architecture																		0.2
National Acad. of Fine Arts (Oslo,Bergen, Trondheim)														x				0.4
The National Coll. of Arts, Crafts and Design (Oslo, Bergen)														x				0.2
Norwegian College of Physical Training and Sports (Oslo)															x			0.3
Norwegian College of Music													x					0.2
Regional Colleges	x	x		x	x	x	x	x	x		x				x	x		8.7
Colleges of Education	x[2]	x[2]				x	x[2]						x	x				11.7
Colleges of Engineering					x			x										7.7
Colleges of Social Work											x							1.1
Colleges of Health Education									x									7.9
Military Colleges																	x	1.0
Other Colleges of Higher Educ.	x	x		x	x	x	x	x			x	x	x[3]				x	11.7
The Free Faculty of Theology	x																	0.4
Ministry of Agriculture																		
Norw. College of Agriculture																x		1.1
The Norw. College of Veterinary Medicine									x									0.2
Other Inst.of Higher Education																	x	5.0
Percentages (1989) : x	0.7	8.7	4.9	4.6	24.3	13.1	9.1	12.9	10.0	0.3	1.4	0.3	0.7	0.7	0.3	1.1	6.9	100

Source: Central Bureau of Statistics of Norway: Educational Statistics, Universities and Colleges, 1 Oct. 1989

x 126,621 students in all [1] Authorized translators [2] One-year units [3] Conservatories of Music

3. INSTITUTIONAL UNITS OF HIGHER EDUCATION

3.1. The Universities

The University of Oslo, the oldest and largest university in Norway, was established in 1811. Until 1946, it was the only university in the country. It has seven faculties which cover all the traditional university subjects. They are the Faculties of Theology, Law, Medicine, Mathematics and Natural Sciences, Arts, Social Sciences, and Dentistry. The Department of Nursing Science, the Norwegian Department of the Nordic College of Domestic Science, and the Centre for Teacher Training are also components of the University of Oslo.

In 1989, the University of Oslo, the Norwegian Defense Research Establishment, the Institute for Energy Technology, and the Norwegian Telecom Research Laboratory agreed to co-operate in establishing new kinds of studies in technology. This action contributes to an effort to increase the university enrollment capacity in engineering sciences, particularly in electronic engineering and information technology.

In order to strenghten international co-operation, the Centre for International Climate Policy Research, and the Centre for Environmental Development were established at the University in April 1990.

As a considerable proportion of the research potential of Norway is concentrated in the Oslo Region, conditions are favourable for the initiation of co-operation between the University, trade and industry, cultural institutions, and various public bodies. As of the late 1980's, the University has co-operated closely with the Science Park A/S (formerly FOSFOR and Innovasjonssenteret A/S). The model chosen for the Science Park was based on foreign experience, especially that of the IDEON Science Park at the University of Lund in Sweden and the Cambridge Science Park in the United Kingdom.

The University of Oslo organizes an International Summer School which each year attracts about 350 students from all parts of the world.

In 1989, the University had about 26,000 students, a figure representing an increase of approximately twenty-two per cent over that of the previous year.

The University of Bergen was established as Norway's second university in 1946. It was founded on the research traditions of the Bergen Natural History Museum which dates back to 1825. Today, the University has seven fa-

culties and awards degrees in medicine, dentistry, nursing science, law, the natural sciences, arts, and the social sciences.

The University of Bergen serves the needs of its own part of the country, the West, from which 75 per cent of its students are recruited. The regional aspect is reflected in many areas of research. The development of the North Sea oil fields has been important to the University, involving it in a wide spectrum of research activities linked to geology, geophysics, marine biology, medicine, psychology, and languages.

Like so many other institutions of higher education, the University of Bergen, in recent years, has attracted an increasing amount of commissioned research. The 1980's also witnessed the launching of large interdisciplinary projects.

In co-operation with the City of Bergen, the County of Hordaland, and private enterprises, the University of Bergen has formed Høyteknologisentret A/S (Centre for Industrial Development), for the purpose of assisting the development of future enterprises and thereby the expansion of business activities in western Norway.

Several interdisciplinary research centres have been opened at the University using the above mentioned Høyteknologisenter as an umbrella organization. International Business Machines (IBM) opened its seventh European Centre here, its main areas of research being in the fields of offshore technology, aquaculture, and information technology. The Joint Laboratory for Biotechnology and the Nansen Centre for Remote Sensing are also new institutions. A Centre for Advanced Technology will provide a research milieu for both the University and for private industrial research.

Norway's largest social science programme, the LOS project, is also directed from the University of Bergen. This programme will give priority to research on management and on participation and motivation systems so as to enhance the competence for reorganization and change at all levels of an organization.

The establishment in 1986 of a Centre for Development Studies represents a new dimension in the University. The objective of the Centre is to stimulate, to initiate, and to co-ordinate development-related research, training, and other activities within and between the various departments and faculties of the University of Bergen. The Centre also maintains and expands the University's network in the Third World.

In co-operation with the Norwegian Broadcasting Corporation, the University of Bergen is examining the possible introduction of distance education.

The University had approximately 12,000 students in 1989.

The University of Trondheim was established in 1969 through the amalgamation of 3 institutions, the College of Arts and Science, the Norwegian

Institute of Technology, and the Museum of the Royal Norwegian Society of Science. The Museum, which is one of the oldest scientific institutions in Norway, includes zoological, botanical, mineralogical, numismatic, and archeological departments, as well as a marine station. At present, the University of Trondheim offers programmes in the fields of the humanities, the social sciences, the natural sciences, clinical medicine, technology, and architecture.

The Faculty of Medicine, which only offers studies in clinical medicine, has a capacity limited to 160 students. Medical students at the University of Trondheim have generally completed their pre-clinical studies at the University of Bergen.

The Norwegian Institute of Technology (NTH), which opened in 1910, was until 1984 the only institute in Norway offering the degree in Civil Engineering. Today it trains students in mining, construction, electronics, computer technology, machine technology, chemistry, mechanical engineering, applied physics, and architecture.

The university had a total enrollment of around 12,000 in 1989 of which approximately 6,600 were registered at NTH.

NTH underwent an extensive programme of expansion during the 1950's and 1960's. In 1950, the Institute founded SINTEF (the Foundation for Scientific and Industrial Research at NTH) in order to have an integrated, effective organization to promote co-operation between researchers at NTH and industry. SINTEF is today the largest contract research organization in northern Europe, with annual sales exceeding NOK 1 billion. NTH and SINTEF work in close co-operation, sharing premises and equipment and making extensive use of each other's personnel. This arrangement, which has been beneficial to both parties, has been held up as an example of how a basic research institute and a contract research institute can complement each other.

The University of Tromsø, the world's northernmost university, was founded in 1968. Its first students were admitted in 1972. The University awards degrees in medicine, the natural sciences, the humanities, fishery subjects, law, and the social sciences. FORUT, the Research Foundation at the University of Tromsø, was founded in 1984. Its purpose is to promote the common research interests and milieu of the two institutions and to make possible a rational pooling of their results.

A decentralized agricultural programme run in co-operation with the Norwegian College of Agriculture began to function in 1987.

Studies in engineering have recently been established, as well as the Roald Amundsen Centre for Arctic Research.

The Norwegian College of Fisheries was established in 1971 and was incorporated into the University of Tromsø in 1988.

During the autumn semester of 1989, there were approximately 3,500 students at the University of Tromsø, of which 75 to 80 per cent came from the three northernmost counties.

3.2. The University Level Specialized Colleges

In addition to the four universities, Norway has six specialized university level colleges.

The Norwegian College of Agriculture at As, near Oslo, was founded in 1897. It conducts research and offers teaching in agriculture, animal husbandry, area planning, landscape architecture, management of the natural environment, nutrition, plant cultivation in agriculture and horticulture, and forestry.

In 1989, it had approximately 1,250 students.

The Norwegian College of Veterinary Medicine, in Oslo, was established in 1935. In 1989 it had an enrollment of about 300.

The Norwegian School of Economics and Business Administration, in Bergen, was founded in 1936. It trains economists and business graduates. A four-year course can be followed by 2 years of further specialization through enrollment in financial and administrative subjects as well as in general subjects. This institution also trains Norway's certified public accountants in a four-year course and holds the national examination for authorized translators. The enrollment at this college currently stands at about 1,700.

The Oslo School of Architecture, which was permanently established in 1961, trains architects to the same standards as the Norwegian Institute of Technology in Trondheim. The institution has approximately 250 students.

The Norwegian College of Physical Education and Sport in Oslo was established in 1969. Examinations may be taken in physical education and sports. Students can qualify, among other things, to teach physical education in schools. The college currently numbers about 440 students.

The Norwegian State Academy of Music, in Oslo, was founded in 1972 and trains performing musicians and composers. It has approximately 300 students.

3.3. Non-University Public Institutions

The non-university institutions mainly offer course programmes of two or three years' duration. Longer courses have also been introduced at some of the institutions. Most of them are oriented towards specific professions. Their graduates become professional or paraprofessional personnel in such areas as school teaching (pre-school and compulsory school levels), engineering, social

work, administration, economics, electronic data processing, the health professions, libraries, journalism, etc. Higher education for military personnel also falls into these categories. Before 1969, few of these short-term establishments were considered to be parts of the higher education sector.

The new element among the non-university institutions are the **regional colleges**, institutions of a more polytechnic character, all of which have been established over the last twenty years. Although the education offered is interdisciplinary and in principle vocationally oriented, certain programmes may also fit other patterns of higher education like undergraduate university studies, for instance. At present, regional colleges can be found in fourteen of the nineteen counties. The total student enrollment amounted to nearly 11,000 in 1989.

The **Colleges of Education** train and provide in-service training for pre-school teachers, teachers of general subjects, teachers of specialized subjects, and teachers of vocational subjects. There are 28 public colleges of education, 19 of which mainly provide training for teachers of general subjects, and there is one private college for kindergarten and pre-school teachers. Altogether, these institutions have a total enrollment of approximately 12,000 full-time students.

Today initial teacher training takes three years. There are possibilites for further studies through progammes lasting 1/2 to 1 1/2 years for teachers wanting to qualify for up-grading to a higher level or simply for increased wages. The recent Government proposed to add one year to the compulsory period of training for primary and lower secondary school teachers as of the autumn of 1991, a proposal which was withdrawn once a new government came into office in November 1990. In accordance with the Norwegian system of automatic transfer of credit among most institutions of higher education, portions of a student's training may be taken at other colleges or universities.

University graduates and vocational school teachers may also receive training at colleges of education. Some colleges of education offer courses at graduate level in a limited number of subject areas. The colleges are increasingly offering refresher and pedagogical development courses.

Colleges of Engineering (formerly referred to as technical schools) offer courses in building and construction, major fields in electronics such as information technology, chemistry, and mechanical engineering, each field covering a wide variety of disciplines. The basic course programmes have been extended from two to three years. The qualifications obtained at colleges of engineering can also provide a basis for more advanced study. At present, 6,500 places are available at colleges of engineering.

Colleges for the Education of Health Personnel include colleges of nursing, occupational therapy, physiotherapy, radiography, special care nursing, and bioengineering, as well as the National College of Pharmacists. In 1989,

the national total was 53 colleges, of which 46 were public and 7 private, training nearly 9,900 students.

Colleges of Public Administration and Social Work include colleges in Oslo, Stavanger, and Trondheim. All three train social workers. The colleges in Oslo and Stavanger also train child care personnel; that in Oslo additionally teaches local government administration. In addition to their ordinary three-year course programmes, the colleges offer refresher courses and in-service training in administration and management and in social work. Nearly 1,400 students were currently attending these colleges in 1989. Training in Child Care Education is also offered at Finnmark College and at Møre og Romsdal College, Volda. There are also three-year programmes of Training in Social Work at the Colleges of Finnmark, Nordland, and Sogn og Fjordane.

The Norwegian School of Library and Information Science trains librarians for various types of library services in three-year course programmes, with the possibility of an additional two years of study in information and information processing for librarians. The School has about 400 students.

The Norwegian College of Journalism offers two years of vocational training for journalists and a half-year course in journalism for applicants who have previously completed higher education. The College has 105 students. Similar two-year programmes in Journalism are found at the Colleges of Rogaland and of Nordland.

The Norwegian College of Hotel Management trains people for administrative posts in the hotel and restaurant trade and in tourism. Basic course programmes take two years. The College also offers more advanced courses and courses in management. The enrollment is 325. The Colleges of Finnmark, Sogn og Fjordane, and Oppland have three-year programmes in Tourism and Travel.

The academies of the fine arts in Oslo, Bergen, and Trondheim train graphic artists, painters, and sculptors, usually in four-year courses. Altogether they have about 230 students.

The national colleges of arts and crafts offer three-year course programmes, with the possibility of adding a "main study" or specialization of one-and-a-half years' duration. The institutions are the National College of Art, Crafts, and Design in Oslo and the Bergen College of Art, Crafts, and Design. The College in Oslo also offers a separate study programme in Industrial Design. The two colleges have a total enrollment of about 525.

The national colleges of theatre arts train a total of about eighty-five students at the National College of Ballet, the National College for Operatic Art, and the National College for Dramatic Art, all located in Oslo.

The seven **national conservatories of music** provide vocational training in music and in music instruction. In addition to a three-year course programme which qualifies students as music teachers, courses are offered in

church music and as parts of in-service training programmes. The conservatories have a total student enrollment of 540.

A private conservatory of music with 60 students and a private college of ballet with 27 students also operate. Both receive state support.

3.4. Private Institutions

There has been a certain expansion of private higher education in recent years, a phenomenon which is in part the reflection of a low growth policy for the public system of higher education. The institutions concerned have sometimes also been more flexible in meeting new needs than the public system. Typically, the growth in private education has concentrated on economics and business administration, a relatively inexpensive field of study, leading to qualifications which until recently have been much in demand in the current labour market.

The same applies to the field of information technology. The introduction of degree courses in these fields at private institutions has given rise to competition for corresponding course programmes offered by the public institutions to the benefit of the latter. In other fields, however, the courses offered by private institutions have, by and large, not been very innovative nor sufficiently competitive to significantly influence the public system.

The largest of these institutions is the Norwegian School of Management which was established in 1943. The institution claims that it had 10,300 students in 1989.

The Free Faculty of Theology, another institution of higher education, had approximately 500 students in 1989. As the first private institution of higher education, the Faculty now offers the doctor's degree in Theology. Two other highly reputed private institutions are the Norwegian Academy for the Study of Religion and Education in Bergen and the Missionary College in Stavanger.

4. THE FINANCING OF HIGHER EDUCATION

4.1. Sources, Volume, and Allocation

With few exceptions, higher education in Norway is publicly financed as is the case also for most of the few private education institutions. The total amount of funding to be granted directly by the state is determined by the **Storting** as part of the annual budget. The general rule is that government budgets only commit Parliament for one year and that budget appropriations cannot normally be transferred from one year to another. However, five percent of the allocations for the running costs of higher education can be so transferred.

About ten percent of institutional expenditures are covered by external sources through contract research and research foundations. Only adult education receives a significant amount of private financing.

Student tuition fees for public higher education were abolished many years ago. Students must only pay a small sum ($72 US in 1989 for the two terms) which is applied to the welfare activities carried out by student organisations. The issue of student fees has not come up in the Norwegian debate on the financing of higher education for several reasons. The traditional view that education should be free for all who qualify still holds in Norway. Moreover, the question must also be viewed in the light of the financial arrangements which have been made to cover the private costs for higher education level studies. Most students are entitled to relatively generous loans, and in addition, students without the possibility of private support receive means-tested grants. Publicly-financed student welfare services constitute an additional benefit. Against this background, one might ask whether it would really be reasonable to introduce fees for students in higher education.

Approximately ninety per cent of the total central government expenditure for higher education in the late 1980's was allocated by the Ministry of Education and Research (until 1 January 1990 the Ministry of Cultural and Scientific Affairs, and from 1 January 1991 the Ministry of Education, Research, and Church Affairs). The Norwegian College of Agriculture and the Norwegian College of Veterinary Medicine receive their funding from the Ministry of Agriculture. Higher military education is financed by the Ministry of Defense.

In 1988, the net current expenditure for higher education amounted to approximately NOK 5.82 billion. The net current expenditure in 1989 amounted to approximately NOK 6.28 billion to which should be added some expenditures for investments amounting to approximately NOK 300 million in

1988 and NOK 442 million in 1989.

According to the Government's figures for 1990, the total budget for higher education institutions increased by twenty per cent from 1989 to 1990, an increase due above all to a 73 per cent increase in investment, mainly in new buildings. The institutions, however, have not been fully compensated for the expenses linked to the increases in student enrollments. Expenditure per student in real terms has decreased for the system as a whole, with some variations between fields of study.

The percentage of GNP devoted to higher education increased rapidly until the mid-1970's, from 0.34 per cent in 1961 to 1.02 per cent in 1975. Then a slight decrease in the percentage occurred, one which could not, however, be viewed as a reduction in political priority. A similar decrease has characterized most public expenditure, its cause being the rapidly increasing income from oil exploitation, which to a great extent was used to pay off foreign debts. The reduction in the percentage of GNP allocated to higher education in 1985, however, could be viewed as reflecting the lower priority being accorded to this sector of public activity. In 1987, the sector was again given a somewhat higher priority. In 1988 and 1989, 1.05 and 0.94 per cent respectively of GNP were devoted to higher education.

The greater freedom with regard to financial resources which has come in the wake of increased institutional autonomy has led to the gradual ending of the practice whereby the Government imposed budgetary directives on the institutions. Within the general budgetary framework, the institutions are now free to allocate their funds among salaries and other recurrent expenditures. However, each construction project must still be approved by the Government, and general regulations still govern the maximum number of posts to be established.

Private donations have played a minor role in the financing of Norwegian higher education. In recent years, however, the contributions to research projects within higher education institutions by external, private enterprises and public agencies have become more frequent. The relative importance of such funding varies greatly from one field of research to another, oil-related research being clearly the field attracting the greatest amount of external money.

Slightly more then twenty per cent of the total Norwegian expenditure on research and development in the 1980's went to research undertaken by institutions of higher education. The figure represents somewhat more than half of all the research undertaken by public institutions. On the other hand, about 75 per cent of all fundamental research in Norway takes place within institutions of higher education.

With regard to the expenditure for research within individual institutions of higher education, 75 per cent of it was covered by their regular budgets. Research councils account for another 16 per cent. These must be viewed

primarily as another channel for the public financing of the institutions. At the end of the 1980's, grants from other sources amounted to twelve per cent of the total research expenditure in higher education institutions. Of this amount, three per cent came from public agencies; five per cent, from private enterprises; and four per cent, from other sources, primarily foundations. Institutions may also accept contracts for the external financing of educational activities, but they do so only rarely, primarily in the context of adult education courses, either partly paid for by the students, or organized under contract with external agencies or organizations.

4.2. The Competence Centres

In addition, a series of competence centres has developed, with close links to the major institutions of higher education. These centres act as bridges between the institutions and external users of research such as public authorities and industry. They are often organized on a regional basis, partly as efforts in favour of regional development. To a considerable extent, they draw upon the scientific personnel within the institutions of higher education, but their activities are not assimilated to those of the higher education system itself. The research activities of these centres are mainly oriented towards applied research and development work, corresponding to about one-fourth of the total R&D budgets of the higher education institutions. The oldest and largest of these organizations, SINTEF, which is affiliated with the College of Advanced Technology within the University of Trondheim, has a staff of approximately 1800 and a budget of about NOK 1 billion. From a financial point of view, the foundations receive some public support, but they are primarily financed through external research contracts.

The competence centres have represented a flexible arrangement for contract research, avoiding some of the rigidities which still characterize the institutions of higher education. Their existence explains the low percentage of external financing of higher education institutions. They serve as intermediary agencies connecting users of research with the research resources of the institutions. Although the system is not without its problems, it has probably served to shelter the institutions from an overly great external drain on their scientific personnel. At the same time, it has opened up widened external contacts for the institutions.

A largely unsolved problem, however, is the use of scientific personnel hired by the foundations, especially when they have duties within the educational institutions. Efforts to solve this seeming conflict of interest will be one of the major concerns for future policies in this field.

4.3. Private Institutions

About fifteen per cent of the student population are enrolled in **private institutions** of higher education. A considerable proportion of the operating costs of these institutions is covered by public funding. Grants to them amount to around five per cent of the public budget for higher education. Students who are enrolled in course programmes in those institutions, which are considered equivalent to public higher education institutions, have the same rights to state scholarships and loans as those studying at the public institutions.

5. THE ADMINISTRATIVE STRUCTURE

5.1. A Centralized System

The highest administrative body for the higher education institutions is a ministry, normally the Ministry of Education and Research. In recent years, there have been moves to bring all education under one Ministry, but so far this process has not been completed.

The significant increase in the number of higher education institutions is partly the result of the establishment of new colleges, as mentioned above, and partly due to the reorganization of schools which were previously classified as upper secondary, and have today been given the status of higher education institutions. During a transitional period, this situation has given rise to a less uniform administrative structure than was previously the case with Norwegian higher education.

Traditionally, the universities and the other Norwegian education institutions of equivalent level were financed and run by the state. The one exception to this rule was the Free Faculty of Theology, an independent private institution, even if it receives state support for its operating expenses. Restrictions which have been placed on the expansion of the public institutions in recent years have, however, led to the establishment of a number of small, mostly private, institutions.

Table 3 gives the distribution, as of 1 October 1990, of certain institutions of higher education among the state, the county administrations, and private auspices:

In the case of the state education institutions, the central authorities, the **Storting**, the Government, and the sector ministry concerned lay down the framework for their activities through annual budgets, Acts of Parliament, and general guidelines. In the Ministry of Education, Research, and Church Affairs, administrative responsibility for higher education comes under a special department.

An objective of the Norwegian Government is to modify the method of administration from one entailing detailed regulations to a system of management by stated objectives for the different public sectors. All State institutions are expected to use a system of planning that covers both the short term (the budget year) and the medium term (3-4 years or more). State institutions must also formulate their objectives through a dialogue with the responsible Ministry and establish a system for following up their results. This approach to management is only now getting underway in the higher education sector.

Table 3

Higher Education Institutions According to Proprietorship in 1990

Type of Institution	Total	State	County	Private
Universities[1]	13	10	-	3
Regional Colleges	15	14	1	-
Colleges of Education	27	26	-	1
Colleges of Engineering	18	16	1	1
Colleges of Social Work	4	3	-	1
Colleges of Health Education	48	41	-	7
Other Institutions of Higher Education	25	17	-	8
Total	**150**	**127**	**2**	**21**

1 Also includes specialized colleges at university level.

Source: The Ministry of Education, Research, and Church Affairs

The universities enjoy a great deal of autonomy within the limits mentioned. Each institution works out its own budget proposal for the Ministry, allocates the annual grant for the running of the individual departments and for other purposes, approves course programmes, appoints staff, and lays down the duties of the latter.

5.2. The 1990 Act on Higher Education

A new Act, common to the universities and to the academic colleges, entered into force as of 1 January 1990, replacing nine other Acts dealing with the organization and the administration of the various institutions. The Act applies to the Universities of Oslo, Bergen, Trondheim, and Tromsø, the Norwegian College of Agriculture, the Norwegian College of Veterinary Medicine, the Norwegian School of Economics and Business Administration, the Norwegian College of Physical Education and Sport, the Oslo School of Architecture, and the Norwegian State Academy of Music. By a Royal decree of 6 April 1990, chapter 11 of this Act, On Degrees and Examinations, was made valid for the Regional Colleges and the Colleges of Education, Engineering, Journalism, Library Work, and Public Administration and Social Work. Eventually, the entire Act or parts of it will be applied to other institutions of higher education.

The Act is aimed at giving the institutions a greater degree of self-government than they have had in the past. It deals with forms of administration and organization; student entrance procedures; examination procedures;

regulations for closed and open studies; the designation of degrees as well as of the length of normal periods of study; the qualifications and conditions to be met in order to have student status, and employment procedures for personnel at the various institutions.

The former faculty Senates, which could have up to fifty members each, have been transformed into Steering Committees with nine or thirteen members including the rector, the prorector, representatives of the academic staff, representatives of other personnel, and representatives of the students. The deans and other representatives of other formal administrative units are disqualified from membership in the governing boards this to make sure that the board members represent their respective institutions as a whole instead of acting as representatives of single faculties. The Ministry lays down the rules for the election of the steering committees.

Ranking below the Steering Committees are the departments, the faculties, and equivalent units, if any. The institutions themselves decide how many members these units should have.

Each institution must have a Council, its size being decided by the institution itself. However, the proportion of the different groups of personnel and the students to be represented is based on a percentage established by law. The main task of the Council is to give advice to the Steering Committee. According to the law, an increasing number of decisions are becoming the responsibility of the departments.

Among the matters which have come under the jurisdiction of the institutions are the nominations of all personnel, including full-time professors who previously were nominated by the King in Council.

The University Director, who is responsible for the day-to-day management of the University, is appointed for a set term of several years.

Pursuant to the provisions of the new Act, one can legitimately take an examination at a university or at an academic college without having been admitted to or having been enrolled in a course at the institution in question. An exception to this rule is made for studies regarding compulsory presence due for laboratory work and the like.

The normal requirement for access to higher education is completion of general upper secondary education. Some students who do not have this background may be admitted. In this case, they must have acquired sufficient qualifications by other means, for instance, through work experience. The education institutions themselves may work out proposals for their own admissions regulations, but these will have to be approved by the Ministry. The Ministry will set minimum admissions requirements and may formulate comprehensive regulations for admission, when necessary, to higher education based on a total evaluation of the educational situation in the country.

The right to grant degrees, to require examinations, and to set the length of normal periods of study is still exercised exclusively by the Government. The Ministry decides which subjects and fields of study should be covered in examinations.

Regional College Boards have been established in every region. Sixteen of these Boards have been functioning since 1976. The newest one, the Board for Oslo/Akershus, began its activities in the autumn of 1979. The Boards, the members of which are appointed by the Ministry of Education, Research, and Church Affairs, are composed of representatives of the staff and the students of the institutions under the jurisdiction of the Ministry and of representatives proposed by the County Councils. That the locally elected representatives are in the majority is deliberate, done so as to ensure close contact with the region. The period of office for the locally elected representatives in these Boards follows the term of office for municipal and county councillors. Student representatives are elected for one-year terms, and representatives of the staff are elected for two-year terms. As of 1981, all the Regional College Boards have secretariats with permanent staffs.

The Ministry has delegated many practical/administrative matters partly to the Regional College Boards and partly to the colleges themselves. The most important responsibilities of the Regional College Boards are the operation and the planning of higher education in the respective regions and the drafting of reports on it. They also have a duty to state their views on the capacities as well as the locations of private institutions which are of the same level as colleges of higher education, as the Boards have general responsibility for planning and co-ordinating the activity of all higher education institutions in their regions with the exception of the universities.

As part of the development towards a more autonomous status for colleges and other institutions of higher education, a few points of the Act **Concerning the Training of Teachers** of 8 June 1973 were amended in 1988. The central authorities have delegated a great deal of administrative responsibility to the individual colleges of education, even the responsibility for organizing examinations in teacher training. This new procedure has led to a change in the functions of the National Council for Teacher Education, the role of which in the future will be to co-ordinate activities and to give professional advice on matters related to teacher training, rather than to control the administration of the colleges.

5.3. The Adult Education Act

This act states that responsibility for adult education courses leading to public examinations is in the hands of the public education authorities responsible for the various levels of schooling. Voluntary educational organizations have the task of setting up courses for which no official syllabi or examinations exist. These organizations may be associated with various interest groups, or they

may represent aspects of university activities.

The Ministry of Education, Research, and Church Affairs is responsible for the administration of the statutory educational provision laid down by the Act. The Government appoints an advisory body, the Council for Adult Education, to assist the Ministry in matters concerning adult education.

The Adult Education Act introduced governing bodies for adult education into municipalities and counties. The cultural committee of the municipality or the county has the overall responsibility for the development of adult education at local and regional level. The county or municipal education committee can be assigned this task.

6. THE TEACHING AND RESEARCH STAFF

6.1. Numbers and Categories of Staff

In 1987, the institutions of higher education of Norway employed nearly 7,300 teachers in full-time posts. In addition, nearly 2,200 persons held part-time posts. The table below shows that the number of full-time posts had increased by 27 per cent since 1978 and that the number of part-time posts had increased by 70 per cent.

In 1987, professors and readers had become a single group with identical teaching duties. They constituted 28 per cent of the full-time academic staff at the universities. Almost half of the full-time staff were lecturers. The number of research assistants in full-time posts increased, constituting 14 per cent in 1987.

At the universities, the most significant change from 1978 to 1987 has been the notable expansion in the number of part-time lecturers, research scholars, and research assistants.

The increase in the number of full-time teachers was highest at the non-university institutions. Since 1978, the non-university institutions have been assigned new posts as professors and readers. The full-time lecturers assigned to them have increased by 37 per cent through 1986. Lecturers in full-time posts constituted 61 per cent of the full-time staff at non-university institutions.

Due to changed registration procedures, figures for 1989 are not quite comparable to previous years. The figures for 1989 show that the teaching staff constituted approximately 9,100 persons, whereof 47 per cent worked at the universities and 53 per cent worked at non-university institutions.

Out of the total, every fifth person had a part-time post. At the universities only 6 per cent worked part-time, but in the non-university institutions as much as 34 per cent did so. Every fourth of the total teaching staff was a woman. Of the full-time posts at the universities, 18 per cent were held by women. At the other institutions 41 per cent of those employed in a full post were women.

In 1989, professors at the universities constituted 29 per cent of the full-time academic staff. Almost half of the full-time staff were lecturers. University scholars in full-time posts constituted 9 per cent of the full-time posts. Among those working part-time, however, they were the largest group, constituting 36 per cent.

Table 4

Full- and Part-Time Teaching Staff According to Post and Institution in 1990

Institutions	Full-time post			Part-time post		
	Total	Men	Women	Total	Men	Women
Universities						
Professor	1,161	1,079	82	6	5	1
Lecturer	1,860	1,511	349	93	48	45
University scholar	465	311	154	56	35	21
Research assistants	356	248	108	99	66	33
Other academic occupations	182	136	46	21	6	15
Universities in all	**4,024**	**3,285**	**739**	**275**	**160**	**115**
Non-university institutions of higher education	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**
Professor	50	48	2	7	7	-
Reader	49	45	4	5	4	1
Lecturer	2,011	1,543	468	781	616	165
Teacher/practical teacher	729	203	526	402	108	294
Research scholar	41	29	12	6	2	4
Director of studies	6	5	1	1	1	-
Other educational staff	144	118	26	437	352	85
Principal	157	104	53	3	3	-
Non-university institutions in all	**3,187**	**2,095**	**1,092**	**1,642**	**1,093**	**549**
Total	**7,211**	**5,380**	**1,831**	**1,917**	**1,253**	**664**

Source: The Central Bureau of Statistics, **Educational Statistics, Higher Education,** Higher Education, 1987.

New regulations formulated by the Ministry in 1986 state that not more than approximately ten per cent of the so-called recruit posts at each institution are to be for research assistants. These are posts which cannot be held by the same incumbent for more than 2 years. During this period, the research assistant is expected to acquire basic knowledge with regard to research methods and work. Teaching duties and laboratory and other activities may be added.

Research scholars will receive research training for periods ranging from three to six years. When applying for a research scholar's post, the candidate must present a research project. The institution accepting the scholar is obliged to give him a sufficient amount of instruction so as to enable him to complete his project. A certain percentage of his time is devoted to so called "duty work" (teaching, assistance, etc.). Altogether, the time devoted to research training ought not to be less than three years.

6.2. Teaching Load and Research Time

A discussion is going on at the universities as to how academic staff members are to divide their time between teaching duties and research.

Up until now, teaching loads have varied for the different categories of teaching staff. For professors and readers, the universities have as a rule set the teaching load at five hours per week. Additional tasks include the preparation of lectures, research, and administrative duties. Special obligations arising from such tasks as serving as chairman of a department will entail a reduction in teaching hours.

A committee appointed by the Ministry has recently presented a report on staff working conditions at universities and at university colleges. The report, which has not yet been fully considered and discussed within the Ministry, concludes as follows:

> The working week is 37.5 hours, with holidays according to official regulations. Staff members are supposed to be present at the institution during regular working time, except when attending conferences, travelling, doing research outside the institution, etc.
>
> At each institution, time should be equally divided between teaching duties and research. Nevertheless, local agreements should be made, both to assure a certain flexibility and to plan the institutions' own use of resources.
>
> The Ministry should not give detailed instructions or regulations on these matters.

Teachers in non-university institutions receive the same salaries as university teachers of the same categories and qualification levels. Employment security is the same as in all public institutions.

6.3. Recruitment of Women

In 1989, women represented 25 per cent of the holders of full-time posts and 34 per cent of the holders of part-time posts in Norwegian higher education. Figures provided by the Central Bureau of Statistics show that at the universities seven per cent of the professors, nineteen per cent of the lecturers, and thirty-two per cent of the recruits in full-time posts were women. The rate of placement of women in institutions of higher education varies according to discipline. The Ministry believes that special measures are needed to increase the recruitment of women to tenured academic and professional positions in universities and research institutions and to recruitment positions and graduate study programmes in certain sectors, including several of the main target areas for Norwegian research, such as technology, mathematics, sciences, and medicine. These programmes can be created in connection with or as part of the general plans of action of the institutions to promote equal status.

At one of the universities, the qualifications of female university lecturers are being evaluated for chairs that become vacant even when they do not specifically apply for them. The ministry has recommended that whenever relevant this procedure be widely employed at all teaching institutions. At the suggestion of the ministry and of the institutions themselves, more than twenty women in such university lecturer posts have been promoted to professorial rank. Furthermore, considerations of equal status have also played a role in other instances of promotion. The plans of action drawn up by the research councils comprise a number of measures aimed at increasing the proportion of women in academic and researchers' positions. These measures include quota systems for scholarships for educational purposes, including doctoral degree scholarships. The Council for Social Science Research has implemented a special scholarship scheme for women who wish to obtain the necessary qualifications for top positions. According to its equal status action plan, the Council for Research in the Humanities is considering a similar scheme.

7. STRUCTURE AND CONTENT OF COURSE PROGRAMMES

Great emphasis has been placed on integrating all of higher education into an overall system. The main difference between course programmes in universities and in non-university higher education programmes is that university course programmes usually last longer and include a stronger element of research activity than the programmes in other tertiary education institutions.

7.1. Course Programmes: Universities

In higher education, the universities and the "scientific colleges" are free to decide upon and to change the content of courses, whereas the Ministry decides what courses should be offered, the duration of study programmes, as well as titles and degrees to be awarded. National curriculum plans exist for vocational course programmes offered by colleges, but these plans are drawn up in such a way that each institution is free, to a certain extent, to determine the practical implementation of the plans in question. At all non-university institutions, new course programmes must go through a formal evaluation process in the Ministry, including an evaluation of contents.

The universities offer both continuous professional course programmes, such as those for physicians, dentists, civil engineers, economists, agronomists, and so forth, alongside more freely organized course programmes in such fields as natural sciences, arts, and social sciences. For these more flexible course programmes there will usually be two possibilities for earned degrees: a lower level and an upper level degree. The lower-level degree is planned so as to require 3.5 to 4 years of study. After approximatively two more years of study and submission of a thesis, a student may be awarded a higher degree. The course programmes, which are organized as continuous, vocational training, vary in duration, but many course programmes require five years or more to complete. In addition, advanced courses are offered which lead to the doctorate. Until recently, one could also earn a licentiate.

The question of the duration of different course programmes at universities has been a central issue in educational debate for many years. Academic pressure in the direction of even greater demands on students is now being countered by rethinking with regard to the contents so that the duration of course programmes can be kept within reasonable limits. Efforts will also be made to support students financially so that they can study full-time and thus reduce the time which they need to complete their studies.

The courses offered at the universities may be described as follows:

– undergraduate programmes	3.5 - 4 years
– graduate programmes	2 years
– professional programmes	4.5 - 6 years
– doctoral programmes	2.5 - 3 years

A more detailed description of the degrees is given in Chapter 10.

Gradually various forms of in-service training and refresher courses will be given increased priority. Probably it will not be useful either to operate with such clear-cut distinctions between different teaching duties as described above, since specialization and advanced study at the postgraduate level will probably, to an increasing extent, take place after graduates have been employed a certain number of years. Such studies will gradually assume the guise of in-service training or refresher study. At the fundamental level, too, the need for keeping up with new knowledge has been increasing the demand for in-service training and refresher study. This need is covered through courses organized partly by the professional associations, partly by public and private employers, and partly by the universities themselves within the constraints of very tight budgets.

Resource-intensive research activities, and thus also the training of research workers, are mainly concentrated in the universities and in those colleges of higher education having an equivalent research commitment. In the main, the training of research workers is accomplished through educational posts linked to these institutions, but in recent years the possibility of organized supervision of research students has been opened up, for example, through the introduction of the new degrees of **Dr. Ing.** and **Dr. Scient.** In areas in which research is included as one of several relevant tasks, for example, in clinical medicine or in technology, the introduction to research work usually takes place in close contact with the practical work of the institution. This principle applies particularly to research recruits working in research units outside the universities. Students enrolled in technological subjects normally receive this type of practical introduction to research through work in research institutes or in industrial laboratories.

7.2. Course Programmes: the Non-University Sector

Studies in the non-university higher education institutions are frequently organized along different lines from those found at the universities. The former institutions will tend to use unorthodox teaching methods, group work, and practice-related exercises. Their course programmes are for the most part professionally oriented, and they often benefit from broader contacts with the world of employment. However, a large number of the small, specialized institutions suffer from a lack both of interdisciplinary competence and of a broad research base.

In most fields of study, students may choose an area of in-depth specialization. For example, a student taking the 2-year social science course at Rogaland College may choose among public administration, the administration of leisure activities, the cultural sector, or personnel administration. To a great extent, course programmes have also been designed on an inter-disciplinary basis, so that, for instance, within the technologically oriented areas, the human, social, and general sociological aspects of technological development may be emphasized. Combinations of health education with education in other disciplines are also being developed.

The range of disciplines or specializations offered within the non-university institutions is more varied today than it was ten to fifteen years ago. However, the growth occurring today is no longer one of widening the range of subjects. Except perhaps for teacher training programmes, new plans seem to be less broad and experimental than they once were.

The regional colleges have been given wide-ranging tasks in the fields of in-service training, refresher courses, and adult education. From the time of their founding, regional colleges have had the authority to devote up to 25 per cent of their resources to adult education and refresher courses. Even if this right has not been fully exercised, adult education has nevertheless become a significant part of their daily activities and has helped to create broad contacts between the colleges and society. The Ministry has stated that adult education should be on an equal footing with the other teaching duties of a college. Some adult education is organized as full-time courses of study aimed at certain occupational groups. In other cases, part-time studies have been developed, leading to an examination corresponding to a one-year course. Moreover, the regular teaching provided by a college also serves as adult education for part-time students taking one or more courses. In this way, the possibility has been opened for either a direct vocational course within a specialized field or a full examination for part-time students over several years.

Even if teaching is the primary task of the non-university institutions, research also plays a significant role in them. Research activities often relate to aspects of the local region of particular colleges. Even at the undergraduate level of higher education, it is important for students to have insight into research methods.

The Ministry is now looking into the system of degrees and titles awarded at universities and non-universitiy institutions of higher education, aiming at the creation of greater flexibility in the system.

8. THE STUDENTS

8.1. Admissions

The normal requirement for access to higher education is the completion of the General Subjects Area of Study at upper secondary level. In 1988, about 31,000 students satisfied this criterion, a figure corresponding to 45 per cent of the total number of 19-year-olds. The percentage has increased substantially over the last two decades, from 23 per cent in 1970.

The frequency of direct transfers from general upper secondary education to higher education dropped from 27 per cent in 1974 to 16 per cent in 1981 but has increased since then to 22 per cent in 1984, 23 per cent in 1987, and 29 per cent in 1988. The figures are not quite comparable due to the upgrading of a number of institutions to higher education status, but the tendency is clear enough. Calculations of the cumulative transfer frequency for those enrolling in higher education a number of years after completion of secondary education show a similar tendency.

In the late 1980's, an increase in the general rate of unemployment led, among other things, to a marked increase in the number of new students. At the universities alone, the total number of new enrollments has risen to around 13,000 in 1988. Since then, the number of new enrollments has continued to increase leading to restrictions in admissions to still more course programmes.

A dialogue is currently being conducted between the universities and the Ministry on how to solve problems linked to this new situation.

Entry to higher education is regulated quantitatively according to the capacity of the individual institutions. Even though the capacities of the non-university institutions have increased, especially in the cases of the regional and the engineering colleges, most course programmes in the regional college system have more qualified applicants than can be admitted. The situation has been particularly severe for those who wish to study economics, electronic data processing, and certain technological subjects. Following a period of relatively easy access, the rejection of qualified applicants for teacher training has also become extensive. In 1989, only around one-fourth of the applicants were admitted. On the other hand, the university programmes in the humanities, in the social sciences, and in the natural sciences have up to now, been admitting most of their applicants.

About ten per cent of the students admitted annually to higher education come in without having passed the normal upper secondary final examination. Such students have acquired appropiate qualifications in non-standard ways, including work experience.

8.2. Student Numbers

The total number of students in higher education in Norway experienced substantial increases, particularly during the 1960's. In 1975, the total number of students enrolled in higher education amounted to nearly 67,000, of which ten per cent were enrolled part-time. In 1984, the total number was approximately 93,500, of which about eighteen per cent were registered as part-time students. In nearly ten years, the total number of students increased by about 40 per cent. By 1989, the number had increased to nearly 127,000 of which 21 per cent were part-time students. Part of this expansion, however, was caused by the fact that some institutions that had been regarded as secondary institutions were upgraded and classified as higher education institutions.

Table 5 presented below illustrates the evolution of the number of students from 1965 to 1989. Full-time studies designate educational activities

Table 5
Part-Time as Compared to Total Student Enrollments in Higher Education, 1965/1989

	Enrollments at All Institutions		Enrollments at Universities[1]		Enrollments at Non-University Institutions[2]	
	Total	Part-time	Total	Part-time	Total	Part-time
1965	36,397	-	19,528		16,869	-
1975	66,816	7,072	40,774	5,294	26,042	1,778
1981	81,606	10,722	39,827	4,600	41,779	6,122
1984	93,535	16,764	42,373	5,511	51,162	11,253
1987	105,014	24,046	43,970	8,794	61,044	15,252
1988	111,605	27,000[3]	47,884	10,000[3]	63,721	17,000[3]
1989	126,621	26,705	56,622	9,758	69,999	16,947

[1] The Universities of Oslo, Bergen, Trondheim, and Tromsø, the Norwegian College of Agriculture, The Norwegian College of Veterinary Medicine, the Free Faculty of Theology, the Norwegian College of Physical Education and Sports, the Norwegian College of Economics and Business Administration, and colleges of Music, Architecture, and Performing Arts.

[2] Regional colleges, colleges of Education, colleges of Engineering, colleges of Social Work, colleges of Health Education, Military colleges, and other colleges of higher education.

[3] Estimates

Source: The Central Bureau of Statistics

which take up most of the time of the students enrolled in them such that the latter are either not economically active or are only partly so. Part-time studies are those in which fully employed persons may enroll.

The figures given above indicate that the total number of students enrolled in the universities more than doubled from 1965 to 1975, whereas the increase from 1975 to 1988 was smaller, from nearly 40,800 students to 48,000. However, from 1988 to 1989, the number of students at the universities increased by approximately 18 per cent, to 56,600. The College of Arts and Science at the University of Trondheim had the greatest increase (27 per cent). The increase at the University of Oslo was nearly 24 per cent; at the University of Bergen and at the University of Tromsø, it was about 21 per cent.

At the non-university institutions, the enrollment increased considerably in both periods, from 16,900 in 1965 to 26,000 in 1975, and to about 70,000 in 1989.

Students attending non-university institutions of higher education have constituted the largest portion of the total number of students since the beginning of the 1980's. The portion of students at non-university institutions increased from 39 per cent in 1975, to 51 per cent in 1981, to 55 per cent in 1984, and to 55 per cent in 1989.

The portion of part-time students enrolled in the universities was 13 per cent both in 1975 and in 1984. In 1987, this figure had risen to 20 per cent. Two years later it was 17 per cent. The share of part-time students in the non-university institutions had increased from 7 per cent in 1975 to 22 per cent in 1984. In 1987 the portion was about 25 per cent and in 1989 24 per cent.

Several circumstances explain the expansion in student numbers after 1965. One is the admission policies of the universities; another is that the regional colleges have increased the number of short courses which they are offering as the result of increased student demand. Also, the colleges in particular have increased their numbers of part-time courses and continuing education offerings. In recent years, students graduating from non-university institutions have had a strong tendency to continue their studies in the universities. Up to the late 1980's, the labour market was also, by and large, favourable to the employment of graduates of higher education institutions.

The expansion of student enrollments in the universities and in the different non-university institutions is shown in Table 6:

Table 6

Full- and Part-Time Student Enrollments in Higher Education in 1975, 1981, 1984, 1987,and 1989: Universities and Non-University Higher Education Institutions

	1975	1981	1984	1987	1989
Universities	40,774	39,827	42,373	43,970	56,622
Non-university Institutions	25,854	41,779	51,162	61,044	69,999
Regional colleges	3,194	6,118	7,113	9,221	10,908
Colleges of education	11,070	13,982	13,075	13,660	14,826
Colleges of engineering[1]	6,652	6,637	7,353	7,694	9,692
Colleges of social work	1,048	1,126	990	1,187	1,388
Colleges of health education	340	7,812	8,006	8,665	9,964
Military colleges	484	661	661	969	1,223
Other colleges of higher education	3,066	5,443	13,964	19,648	2 1,998
Total number of students	**66,628**	**81,606**	**93,535**	**105,014**	**126,621**
Non-university enrollments as percentage of the total	**39%**	**51%**	**55%**	**58%**	**55%**

Source: The Central Bureau of Statistics, **Educational Statistics, Universities and Colleges.**

[1] Includes correspondence courses.

The distribution of students by field of study during four selected years is given in Table 7. The classification by field follows the Norwegian Standard Classification of Education, which follows the principles of the ISCED Classification.

Table 7

Numbers of Students According to Field of Study in Universities and in Non-University Higher Education Institutions in 1975, 1981, 1984, and 1989

	1975	%	1981	%	1984	%	1989	%
General programmes	830	1.2	568	0.7	284	0.3	620	0.5
Humanities, theology, fine and applied arts	12,317	18.5	11,057	13.6	9,585	10.2	13,153	10.4
Teacher training	13,690	20.5	15,657	19.2	15,041	16.1	16,562	13.1
Commercial and business administration, social and behavioural science, law	14,382	21.6	18,370	22.5	28,890	31.0	44,481	35.2
Craft, natural science, mathematics, and engineering	16,252	24.4	18,638	22.8	21,557	23.0	27,773	21.9
Transport and communi-cation	208	0.3	329	0.4	700	0.7	730	0.5
Medical and paramedical programmes	3,993	6.0	11,011	13.5	11,129	12.0	13,021	10.3
Agriculture, forestry, and fishery	769	1.2	922	1.1	885	0.9	1,380	1.1
Military programmes	438	0.7	549	0.7	778	0.8	1,510	1.2
Unspecified programmes	3,749	5.6	4,505	5.5	4,585	5.0	7,391	5.8
Total	**66,628**	**100**	**81,606**	**100**	**93,434**	**100**	**126,621**	**100**

Source: The Central Bureau of Statistics, **Educational Statistics, Universities and Colleges.**

The distribution of students according to field of study has changed considerably over recent years. Apart from the increase in medical programmes, which is primarily the result of the upgrading of health education institutions, student numbers experienced the largest increase, from 1975 to 1987, among those studying commercial and business administration, the social and the behavioural sciences, and law. The emphasis given by the non-university institutions on administration and economics accounts strongly for the pronounced increases in this group. These developments should be viewed in relation to the expected situation in the labour market at the time.

Students who are enrolled in courses arranged by the voluntary adult educational associations and by other such organizations are not included in the figures given above.

8.3. Norwegian Students Abroad

In addition to the figures on students given above, more than 7,000 Norwegian students are now studying in higher education institutions in foreign countries. The number has increased in recent years, partly because a special programme has been launched for the training of Norwegian technologists and economists.

8.4. Distribution by Sex

The expansion of the number of female students in higher education represents an important development, their proportion in Norwegian higher education having increased steadily since the 1960's.

In 1987, women constituted approximately 54 per cent of the **new university entrants**, as compared to 27 per cent in 1960, 35 per cent in 1970, and 50 per cent in 1980.

Of the total number of students in universities and colleges in the mid-1970's, every third one was a woman. In 1987, female students constituted about 53 per cent of the total. The proportion of female students attending non-university institutions has been higher over the last years than the proportion attending universities. In 1989, some 56 per cent of the students in the non-university institutions were women.

The percentage of female students has risen in almost all subjects. The greatest advances have been made in business administration, economics, the social sciences, law, transport and communications, medicine, and agriculture. In 1989, the percentage of female students in regional colleges was 51 per cent; in colleges of education, 78 per cent; in colleges of engineering, 22 per cent; in colleges of social work, 82 per cent; and in colleges of health education, 90 per cent. In the other colleges of higher education, mostly those dealing with business administration and economics, the proportion of women in 1989 was 44 per cent.

The proportion of students registered in 1989 as part-time enrollees, about 21 per cent for men and 22 per cent for women. Approximately 37 per cent of the part-time students were attending universities. Of these, most were women. Of the students in the teacher training colleges, 39 per cent were part-time students, three out of four of them being women.

The Ministry believes that the measures which were adopted to increase the percentage of women students in a number of male dominated fields should be maintained. At the same time, measures to increase the number of male students in pre-school teacher education and in several of the female-dominated health and social welfare training programmes would be desirable.

8.5. Age Distribution

The typical age of graduation from upper secondary education in Norway is nineteen years. However, most students do not enter higher education until after some years of practical experience, and some students interrupt their studies temporarily for other kinds of work.

The proportion of students as a percentage of the total age group has been stable over the past few years, but male and female students represent different proportions. In 1976 12.9 per cent of all men between the ages of 19 and 24 years were registered as students, the figure increased to 15.2 by 1989. During the same period, the proportion of women increased from 8.4 to 19.4 per cent. More og Romsdal had the largest proportion of students in the 19 to 24 year-old age group (20.7 per cent), while Finnmark, the northernmost county, had the smallest proportion (11.6 per cent).

As university studies in Norway last relatively longer than do corresponding studies in many other countries, Norwegian students tend to be relatively old.

There has been a clear tendency towards a more diversified age-structure among students in recent years. The reason for this development seems primarily to be that increasing numbers of students, particularly female students, are returning after several years of practical experience. In 1989, one fifth of the male students and one fourth of the female students were over thirty years of age.

The increases in the numbers of students in the youngest age-groups have been moderate up to the late 1980's. This is particularly true for male students enrolled in the universities. With an increasing unemployment this will probably change.

In 1989, the students enrolled in the regional colleges and the colleges of engineering, in particular, were relatively young, whereas students in teacher training and social work were older. During that same year, nearly 56 per cent of the students enrolled in teacher training colleges were over the age

of 25, and 45 per cent were over 30. Around 70 per cent of the students in colleges of social work were more than 25 years of age, and nearly half of them were older than 30 years. One of the reasons for this age structure is that prior work experience has favoured entry applications from older students. More recently, however, the weight given to work experience as a criterion for admission has been reduced.

The Government White Paper of 1986 emphasized the importance of this general change in the age structure and welcomed the tendency for individuals to enroll in higher education after a number of years of practical experience. Consequently, the Government advocated the continued use of admission criteria which credit up to four years of work experience.

8.6. Social Background

In spite of efforts to remove obstacles to access to higher education, a disproportionate number of students still have upper middle class and upper class origins. Figures from 1975 demonstrate that 60 per cent of the students enrolled in the universities and the colleges belonged to the two highest social categories; 34 per cent in the case of the 19-to-24-year-olds. Only 8 percent of the students were from families in which the parents were unskilled workers, fishermen, or farmers (group IV). The disparity was more marked in the case of the universities than in that of the non-university institutions. In 1980, the tendency was the same. The probability that a graduate from general upper secondary education should become a university student was ten times greater for graduates from upper class than from lower class backgrounds. Comparable figures for later years have not been worked out.

Studies of participation in adult education which have been undertaken by voluntary organizations have shown that social background, earlier education, as well as one's own and one's spouse's occupations are important factors favouring recruitment.

8.7. Transfer Among Institutions

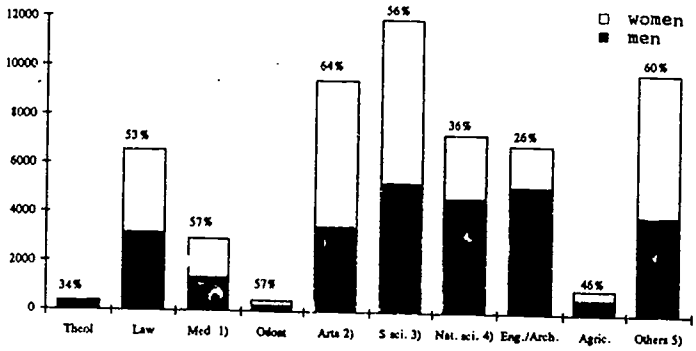
The Norwegian system of inter-institution credit transfer is regulated by law. With some exceptions, which mainly concern the colleges of nursing and health studies and the colleges of maritime studies, students receive full credit for their previous studies if they move from one institution of higher education to another. It is therefore quite common to compose a degree from courses taken both at a regional college and at a university.

In 1981, 1,700 students transferred from the universities directly to the regional colleges. At the same time, 1,300 students transferred from the colleges directly to the universities. In 1984, the corresponding figures were 1,800 and 1,400, respectively, the difference in both cases being partly due to the

fact that students take part of their open studies at the universities in order to collect points allowing them to be admitted to the regional colleges. The general impression is that this pattern has changed very little. Students at the teacher training colleges were more apt to move from one kind of institution to another than were other categories of students.

Figure 3

The Total Number of Full-Time and Part-Time Students in the Universities in 1989: 56,600 Students whereof 51% Women



1) Includes also pharmacy and cand.med.vet.
2) Includes humanities, fine and applied arts
3) Social sciences, education included
4) Natural sciences
5) Includes prep. courses in philosophy

Figure 4
Regional Distribution of Norwegian Higher Education Institutions in 1990

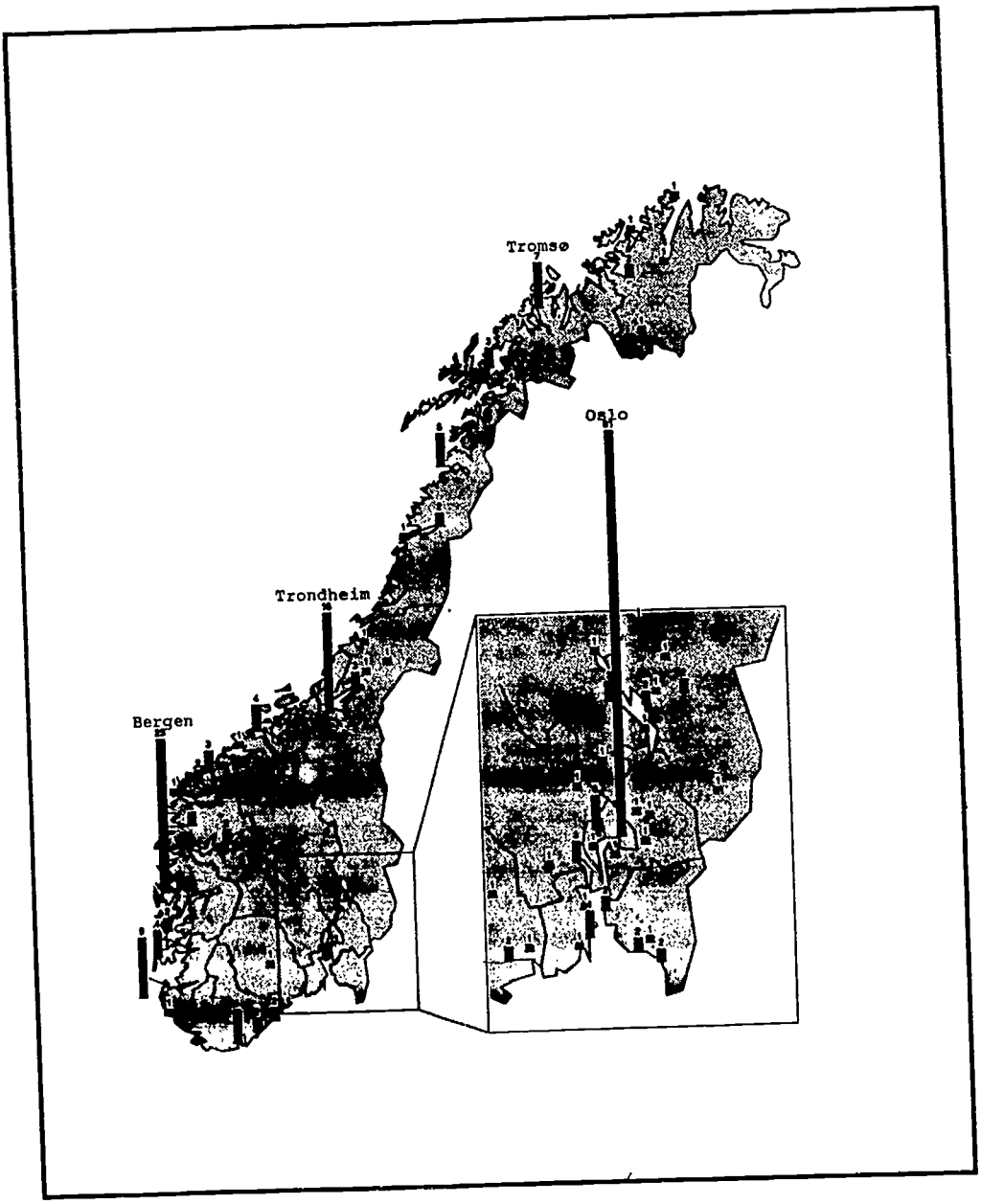


Figure 5
Distribution of Students by Region and by Institution Enrolled in Norwegian Higher Education Institutions in 1990

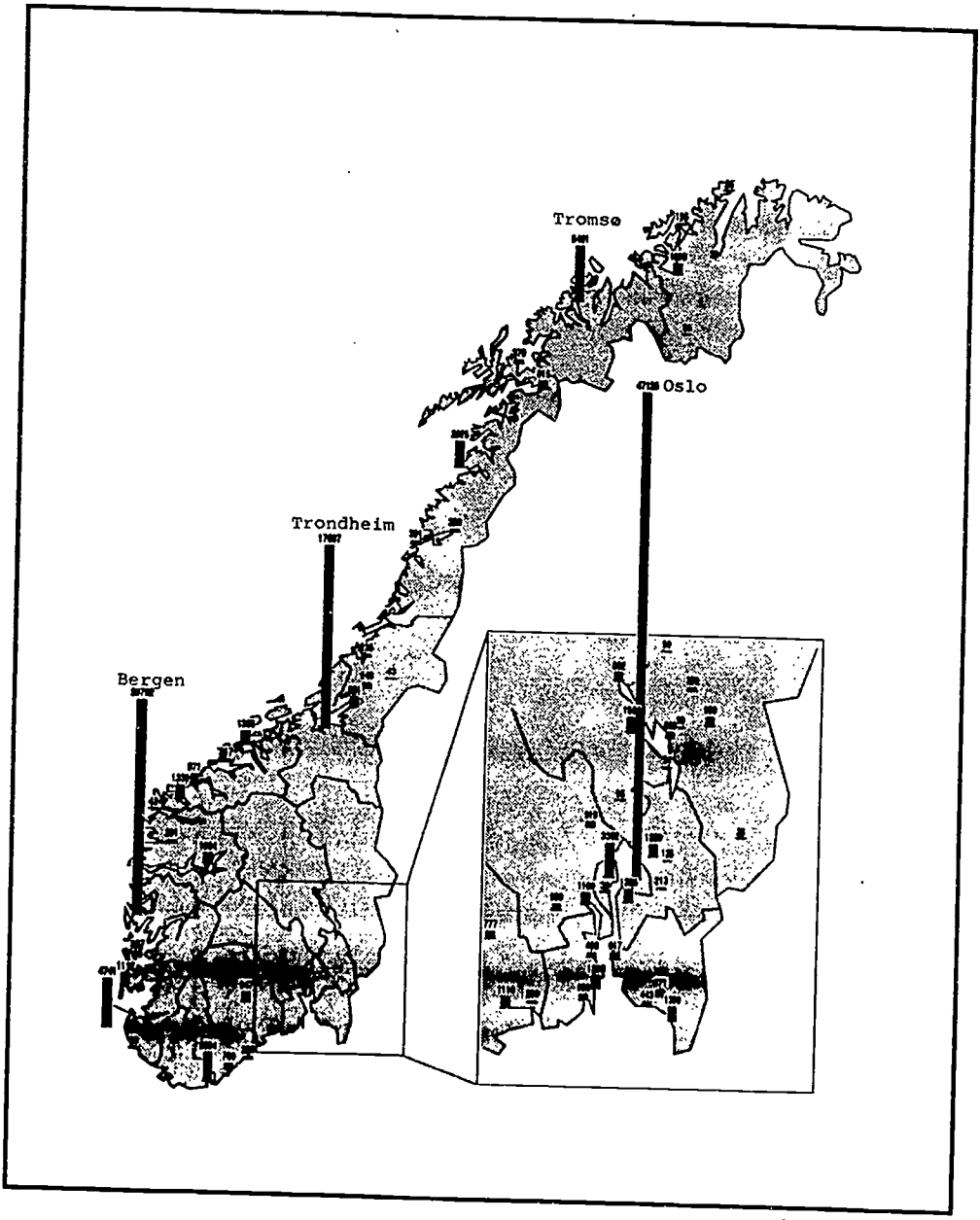
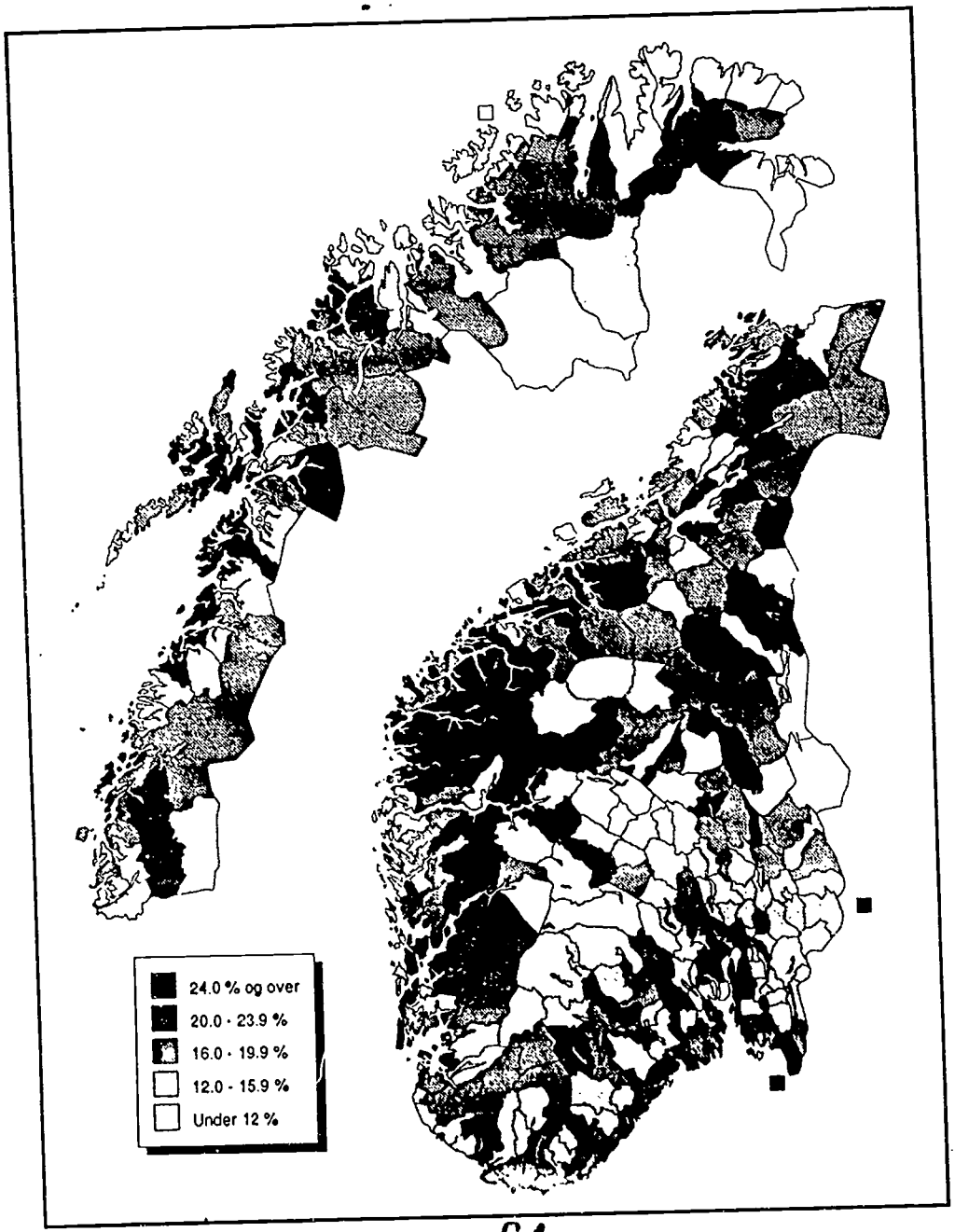


Figure 6

Regional Recruitment of Young People, Aged 20 to 24, to Norwegian Higher Education Institutions in 1990



Source: NDS, Bergen.

9. FOREIGN STUDENTS IN NORWAY

9.1. Numbers of Foreign Students

Compared to many other countries, Norway has a relatively small number of foreign students in its institutions of higher education. This situation has arisen in part because of the Norwegian language and in part because of the peripheral situation of Norway in Europe. However, during the last few years, the foreign student population of Norway has expanded rapidly, particularly the numbers of students having a non-European educational background.

A commission has recently examined the situation of the foreign students in Norway with regard to the following:

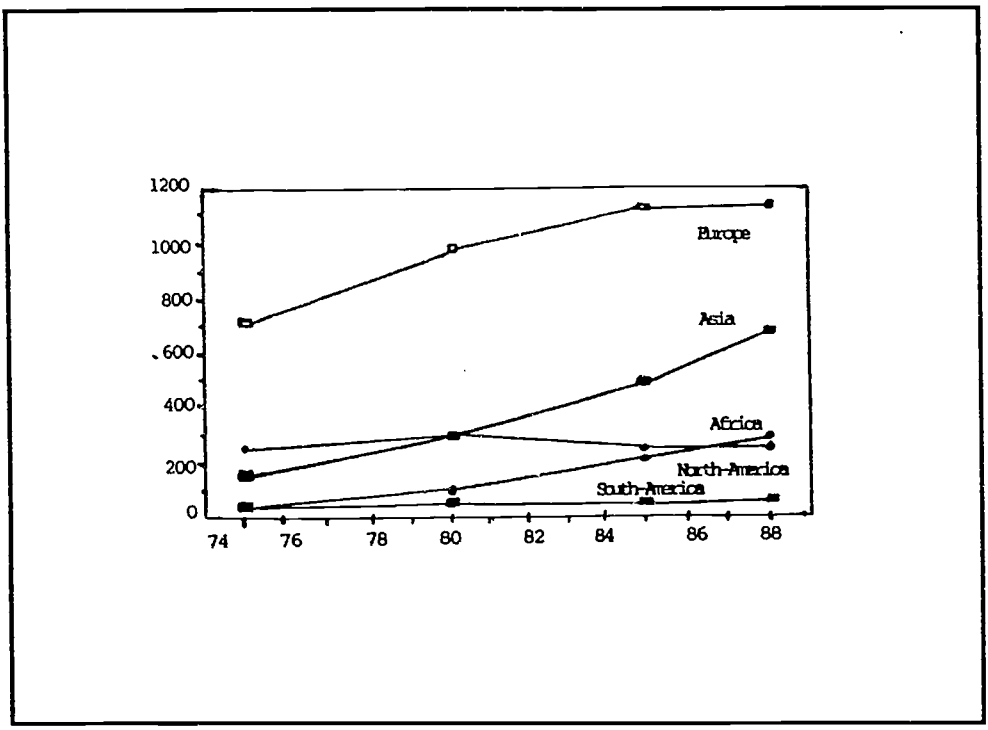
- the need for and the quality of different introductory programmes;
- rules and practices for the granting of educational equivalences for qualifications earned in countries of origin;
- the financing schemes and welfare facilities offered to foreign nationals.

The commission's recommendations will be considered in a White Paper on higher education that will be presented to Parliament in the spring of 1991.

In 1989, there were more than 5,000 foreign students studying in Norway. Of these, nearly 2,800 were enrolled in universities and nearly 300, in the regional colleges. The remaining students were at other institutions of higher education. Of the total number of students, 2,000 had come from developing countries and 3,000 from industrialized countries.

In recent years, between 7 and 8 per cent of the students at the University of Oslo have come from other countries. As a means of helping to correct the disparity between the number of foreign students in Norway and the number of Norwegian students abroad, the intention of the University in a longer-term perspective is that approximately 10 per cent of its students at any time should be from foreign countries.

Figure 7
Foreign Students in Norwegian Universities: 1975 - 1988



9.2. Admission Requirements for Foreign Students

The general admissions requirements for applicants with foreign educational backgrounds are the same for all Norwegian universities (Oslo, Bergen, Trondheim, and Tromsø). However, the particular admissions requirements vary somewhat according to the countries in which applicants have completed upper secondary education. A listing of specific admissions requirement may be obtained from the individual universities.

Applicants who do not fulfill the admissions requirements may supplement their qualifications by taking additional examinations from the General Subjects Area of Studies at the upper secondary level. The results will be evaluated by the universities in each individual case.

Applicants may have to fulfill special requirements in order to be admitted to faculties which have restricted admission (for example studies in medicine, technology, etc.).

Furthermore, applicants must document English language proficiency in order to be admitted to a university. Students from outside the Nordic countries are required to enroll in a one-year introductory Norwegian language programme at an institution of higher learning before beginning regular studies. This programme includes instruction in Norwegian culture and society. Although many of the regional colleges have no such introductory programmes, students must nevertheless have fulfilled this requirement. Exemption from the introductory programme is possible if one of the following requirements is met:

- passing the entrance examinations in the Norwegian language at the given university or college;
- documenting examinations in Norwegian and social studies in accordance with the alternative study plan for foreign students in the upper secondary schools;
- passing the qualifying test, "Examination in Norwegian for foreign speakers".

Colleges not associated with the university system are permitted to admit students according to an individual evaluation. However, the university requirements are used as guidelines in these cases as well.

9.3. Evaluation of Foreign Degrees

An Act of June 1989 stipulates that the universities and the colleges themselves are responsible for evaluating foreign degrees. Prior to passage of this Act, the Ministry of Cultural and Scientific Affairs exercised this authority. For colleges, the Ministry of Education, Research, and Church Affairs still retains the responsibility for this evaluation.

The new University Act having entered into force on 1 January 1990, applications to have foreign degrees approved as equivalent to the corresponding Norwegian degrees should be sent to the appropriate Norwegian educational institutions.

One should note that applicants are often required to take supplementary examinations in order to have their degrees approved. If a foreign degree is evaluated as equivalent to the corresponding Norwegian degree, the applicant will be awarded the right to use the degree and the professional title corresponding to it.

More detailed information may be obtained from the universities and colleges as well as from the secretariats of the various national subject advisory councils (**fagrådene**).

9.4. Controlled Occupations

Certain occupations are protected by law. Thus, in addition to educational requirements, an authorization is necessary in order to be permitted to engage in such an occupation. Prior to any final evaluation of a foreign degree in such fields, the applicant will in most cases be required to pass a qualifying examination. Applications for authorization should be sent to the appropriate ministry, directorate, or institution.

Occupations such as that of social worker, engineer, librarian, etc., are not protected by law. Information concerning the evaluation of qualifications for these professions may be obtained from the appropriate educational institutions or the national subject advisory councils (**fagrådene**).

10. GRADUATES

Degrees offered by the universities and other institutions of higher education may vary from one institution to the next. The new University Act which entered into force on 1 January 1990 states that questions concerning degrees, examinations, and normal periods of study will still be decided by the Government. Decisions as to which subject areas are to be included in given examinations are also to be made by the Ministry.

The basic degree structure is described below:

10.1. Lower and Advanced Degrees

A lower degree (cand. mag.) can be earned in the faculties of arts, of social sciences, and of mathematics and natural sciences at the universities as well as at regional colleges. At universities, this degree normally requires two foundation subjects (one year of full-time studies) and an intermediate subject (one-and-a-half year of full-time studies). The duration of studies is approximately four years in arts and social sciences, or 65 credits and 3.5 years of study at a faculty of mathematics or of natural sciences. The degree may be composed of subjects taken at one faculty or at several faculties. Equivalent education from other institutions of higher education in Norway or abroad can also form part of a **cand.mag.** degree. At colleges, combinations of 3 plus 1 year courses, or 2 plus 2 year courses, etc., are quite common.

An advanced degree requires a principal subject based upon the intermediate level examination in this same subject. An important part of the work for this degree is independent research leading to the writing and the presentation of a thesis. The study of a principal subject requires approximately four semesters (two academic years) in arts fields leading to the title of **cand. philol.**, the same amount of time in the fields of the social sciences leading to the title of **cand. polit.**, and three semesters in the fields of mathematics and natural science leading to the title of **cand. scient.** or graduate engineer.

Another advanced degree (**mag.art.**) is also offered. Its requirements concerning previous grades earned and the writing of a thesis are stricter than those for the advanced degree mentioned previously. It usually represents a total period of study of 7 or 8 years.

Doctorates are awarded on the basis of high level research conducted over a number of years leading to the successful defense of a substantial thesis. Strict demands are made with regard to the insights of candidates into their respective fields. Licentiate degrees are no longer awarded.

The University of Oslo offers advanced degree programmes requiring approximately six years (professional courses). The most common subjects are the following:

- Theology (**cand.theol.**)
- Law (**cand.jur.**)
- Medicine (**cand.med.**)
- Pharmacy (**cand.pharm.**)
- Dentistry (**cand.odont.**)
- Psychology (**cand.psychol.**)
- Education (**cand.paed.**)
- Economics (**cand.oecon.**)
- Sociology (**cand.sociol.**)
- Engineering (**siv.ing.**)

Most of these degrees can also be earned at the Universities of Bergen, Trondheim, and Tromso.

The traditional colleges with university status offer professional courses in

- Agriculture (**cand.agric.**)
- Veterinary medicine (**cand.med.vet.**)
- Engineering (**siv.ing.**)
- Architecture (**siv.ark.**)
- Economics and business administration (**siv.okon.**)

The Free Faculty of Theology and the Missionary College in Stavanger also have **cand.theol.** degree programmes.

10.2. Numbers and Varieties of Graduates

In 1981-1982, the total number of graduates from the universities and the non-university institutions of higher education reached about 15,000, approximately the same figure as for 1985-1986. In 1986-1987 the number had decreased to nearly 14,400[1]. Figures for 1988-1989 will show a new increase in the total number of graduates.

In 1981-1982, 1985-1986, and 1987-1988, graduates of the non-university institutions constituted approximately 66 per cent of the total number of graduates. The number varied between 9,500 and 10,500 each year from 1981-1982 to 1986-1987. However, in 1986-1987 there was a decrease to nearly 9,400 graduates for these institutions.

[1] In addition to data from the Central Bureau of Statistics, use has been made of graduate surveys done by the Institute for Studies in Research and Higher Education, Oslo.

The number of graduates with lower degrees (**cand.mag.**) from the universities varied in the 1980's between 1,500 in 1983-1984 as the highest and 1,200 as the lowest in 1987-1988. From the beginning of the 1980's the number of awarded higher degrees varied around 3,500 up to 1985-1986 whereafter it decreased somewhat to the year after. In 1987-1988 there was a new increase to more than 3,800 higher degrees. The number continued to increase the year after.

The most striking development within the university sector was the decrease in the number of graduates of the faculties of arts. In 1981-1982, 336 earned a **cand.philol.** degree; in 1988-1989 it had declined to 175. As early as in 1971-1972, nearly 650 graduates earned the lower degree (**cand.mag.**); fifteen years later, the number has declined to 250.

The number of graduates in economics and business administration has increased very much during the 1980's, both in the college sector and in the university sector. The total number increased from 1,025 in 1979-1980 to 2,134 in 1987-1988.

The number of lower level university degrees in social sciences also increased much in the early eighties, but at the higher level the figures were rather stable.

The number of pre-school and kindergarten teachers increased through 1985-1986, but went into decline thereafter. There was also a marked reduction in the numbers of graduates of teacher training colleges and from the colleges of engineering.

We have seen that in spite of a strong increase in student numbers during the 1980's, the total number of graduates is fairly stable. The reason why the number of graduates does not increase in step with the student numbers is probably a growing proportion of part-time students who take different types of studies not leading to a degree. The total amount of higher education received by the population is then much higher than reflected by official statistics on graduates. It is received both by persons with and without any previous higher education. In the Norwegian system of higher education it is often difficult to identify what is basic and what is further education.

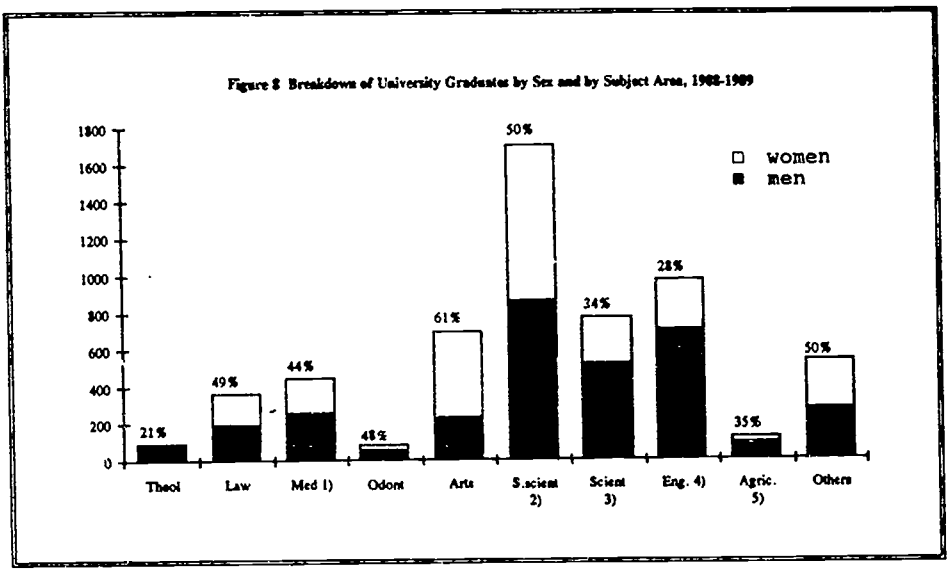
A preliminary study by the Institute for Studies in Research and Higher Education showed that of the students who started their studies in 1980 about 53 per cent had obtained a lower degree in 1988. About one third had obtained a higher degree and about 20 per cent took no exams at all. Between 15 and 20 per cent only intended to take exams in single subjects.

The proportion of female students who completed a degree at a university or at one of the traditional colleges of higher education amounted to 55 per cent in 1988-1989. At the regional colleges too, more than half, or 57 per cent, of the graduates were women. But still the proportion of females is highest at the lowest level and lowest at the highest level of degrees.

The total number of university graduates according to field of study in 1986-1987 is shown in Figure 8.

Figure 8

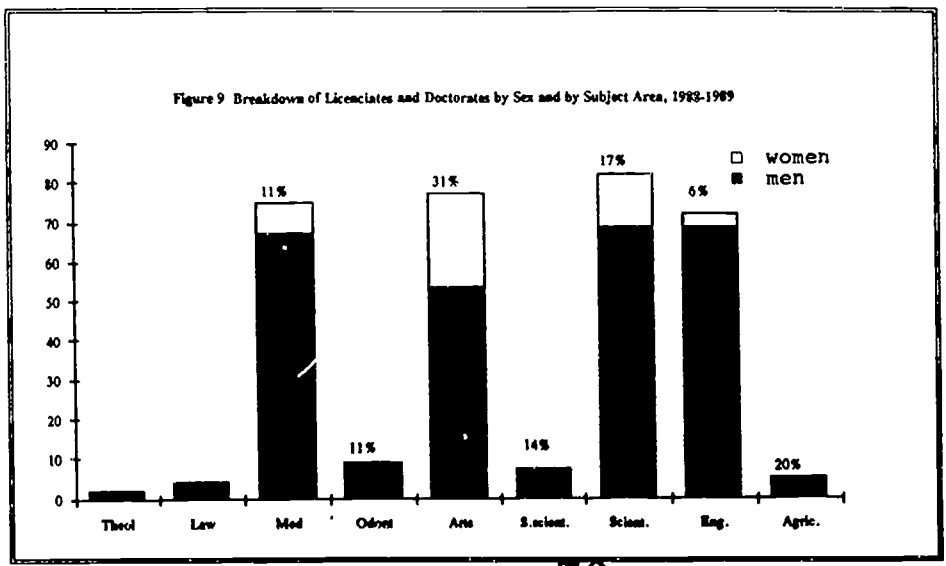
Breakdown of University Graduates by Sex and by Subject Area, 1988-1989



1) Includes cand.med.vet. and pharmacie
2) Social sciences
3) Natural sciences
4) Engineering and architecture

Figure 9

Breakdown of Licenciates and Doctorates by Sex and by Subject Area, 1988-1989



10.3. Employment of Graduates

Forecasting future demands for graduates of higher education institutions is a traditional activity in Norway, dating back to the mid-1950's. Such forecasts have not, however, offered reliable guidelines for predicting opportunities for graduates of specific course programmes. The output of graduates has often greatly exceeded the demand forecasts and has taken other directions in terms of specific fields of study. Yet, by and large, until the late 1980's, Norway has not, for several decades, experienced any grave deficits or surpluses of highly educated manpower. When it has been necessary to fill temporary gaps or to accommodate unexpected numbers of graduates of higher education institutions, flexible arrangements, through in-service training and work experience, have proved quite effective.

The number of graduates, especially of the non-university institutions, increased considerably from the beginning of the 1970's to the beginning of the 1980's. However, the rate of increase declined, in some cases even down to zero, during most of the 1980's.

Since 1972, the Institute for Studies in Research and Higher Education has surveyed recent Norwegian university and college graduates half a year after graduation; 1974 graduates were also surveyed three years after graduation. A study published in 1986 examined the employment situation of 1974 graduates ten years later. It indicates that, on the whole, unemployment was a problem for these graduates immediately after graduation.

The same survey also indicates that from 1977 to 1984 many persons employed in the public sector moved to the private sector. This mobility mainly concerned graduates of course programmes which are relevant to both sectors, i.e. law, economics, business administration, the natural sciences, and engineering. The proportion of graduates in these subjects who worked in the private sector increased from about 33 per cent in 1977 to about 50 per cent in 1984. During the same period, the percentage of female graduates working in the private sector increased from 18 to 21 per cent. To some extent, one might say that the public sector functions as a kind of "training grounds" for the private sector.

If the 1974 graduates are representative of all university graduates, one can generalize that a growing tendency is that those with the best examination results work in the private sector and that those with the next best results go into teaching and research. Civil engineers are most representative of this tendency, and natural scientists come second.

Salary differences are among the causes of the mobility between the public and the private sectors. In 1974, arts and humanities graduates received starting salaries which were slightly higher than the average for university graduates. The salaries of business administration graduates were lower than the average half a year after they had graduated; however, ten-and-a-half-years later, they earned 50 per cent more than arts and humanities graduates. Furthermore, the salaries of civil engineers, lawyers, and economists were much

higher than average, while natural science and agriculture graduates earned below average salaries. Regional college graduates were quite new to the 1974 labour market. Their average salary was 23 per cent lower than the average salary of university graduates. However, a high percentage of them work in the private sector, and in 1984 they earned only 5 per cent less than the average, in spite of the fact that they were three years younger than the university graduates.

The study also reveals a clear tendency for shorter studies oriented towards the private sector to result in the highest salaries, while longer studies often result in lower salaries in addition to larger expenses while studying.

Ten years after graduation, ninety per cent of the university graduates said that their education was very relevant or fairly relevant to their employment. The corresponding figure for regional college graduates was 82 per cent.

A major problem in Norway is the geographical distribution of highly trained personnel. Peripheral areas, especially northern Norway, have difficulties in recruiting qualified personnel in many fields, while the central parts of the country may have a surplus of the same personnel categories. A number of measures have been taken by the government to improve the geographical distribution of highly trained manpower in both the public and the private sectors.

Graduates who had difficulties in finding employment after graduation were of the opinion that their difficulties were to a great extent the result of their unwillingness to move from one part of the country to another. Women in particular gave this explanation. This problem did not pose itself so strongly for graduates from the regional colleges as for university graduates. Some graduates also felt that their competences were too specialized to make them really attractive on the job market. Circumstances related to housing, salary, working hours, and examination results were of relatively little importance to most of these graduates with regard to their choice of work. A similar investigation for 1983 graduates demonstrates the same tendencies.

Another report published in 1987 on the regional colleges shows that in 1982 43 per cent of the new graduates had some problems in finding employment but that three years later the figure had fallen to 25 per cent. For graduates in computer technology, such problems were almost non-existent. Humanities graduates and, even more so, social science graduates spent more time than others in searching for employment. The report also indicates that the demand for economists and engineers is about to be saturated.

As of 1988, Norway has been experiencing a new period of unemployment (nearly 5 per cent) and the Institute for Studies in Research and Higher Education is currently trying to predict the consequences for upcoming graduates. A report published in 1990, including university and regional college graduates, and occasionally graduates from teacher training colleges and engineering colleges, indicates that during the eighties until 1988, only 2-3 per cent of the university graduates who were seeking employment were unemployed six months after graduation. The situation for graduates of the regional colleges

was less favourable: the rate of unemployment was between 2 and 6 per cent. Not more than 1 per cent of the teacher training graduates were unemployed 6 months after graduation (1985-1989). There was also low unemployment among engineering college graduates.

Real wages have mainly remained at the same level during the eighties, for graduates from most fields of study, also compared to wages for industrial manpower. University graduates on the average get better wages than regional college and engineering college graduates, who get better wages than teacher training college graduates.

In the latest survey (spring 1989), the graduate labour market took a sharp term towards the worse, in terms of employment possibilities and real wages. This development was mostly due to a low in the economy, which has led to a big increase in the general unemployment level.

Regional college graduates, especially, experienced more difficulties in finding relevant employment. The percentage in unemployment 6 months after graduation rose to 14 per cent, more entered employment considered not to demand higher education, and more continued to study because of difficulties in finding relevant employment.

Unemployment also rose relatively much for engineering college graduates and graduate engineers and architects. Especially architecture graduates suffered from this development. Thirty three per cent of the architecture graduates in the spring term of 1989 who were seeking employment were still unemployed 6 months after graduation.

Unemployment sank for teacher training college graduates and graduates from humanities. Teacher training graduates, especially, had few difficulties in finding relevant employment. The reason for this is probably a considerable reduction in the number of graduates from these fields of study during the eighties.

After 1989 the general unemployment level increased slightly, and reached approximately 5 per cent in 1990.

11. RESEARCH ACTIVITIES

11.1. Research and Development: Resources

Total R&D expenditure in Norway amounted to more than NOK 10 billion in 1987. This sum represents an increase of 26 per cent over that of 1985 and corresponds to an annual average increase of 12.2 per cent in current prices and 5.7 per cent in fixed prices in relation to those of 1985, thus indicating the lowest real growth since the 1979-1981 period (table 8).

Table 8

Totals of R&D Expenditure in Norway, 1985-1987, and Estimates for 1989 by Sector of Performance

Sector of performance	1985	1987	Average annual growth 1985 - 87 (%) Current prices	Fixed prices	Estimate 1989
Industry	3,574	4,549	12.8	5.3	5,300
Institute sector	2,826	3,605	12.9	7.4	4,200
Higher Education sector	1,803	2,166	9.6	3.9	2,600
Total	8,203	10,320	12.2	5.7	12,100
Total as % of GDP[1]	1.6	1.8			1.9
Millions of NOK					

[1] *Source for GDP* : Revised National Budget, 1989, and Statistical Yearbook, 1988

Expressed as a percentage of Gross Domestic Product (GDP), total R&D expenditure in 1987 came to 1.83. Comparable figures in 1981 and 1985 were 1.3 and 1.6 respectively. Estimates for 1989 indicate that the proportion of GDP spent on R&D will increase to 1.9.

The most characteristic feature of the trend from 1983 to 1985 was the relative decline in public funding, its proportion dropping from 51 to 45 per cent, while the proportion of the industry increased from 43 to 50 per cent. For

1987, the two sources of funding are nearly balanced, with industry financing 48 per cent and public sources, 47 per cent (Cf. Table 9). But the proportion of public funds is still considerably less than in 1977, when it was 61 per cent. However, the proportion of public money spent on R&D was equivalent to 0.9 per cent of GDP, which is the same as in 1977.

Table 9

Totals of R&D Expenditure in Norway in 1987 and Estimates for 1989 by Source of Funding and Sector of Performance

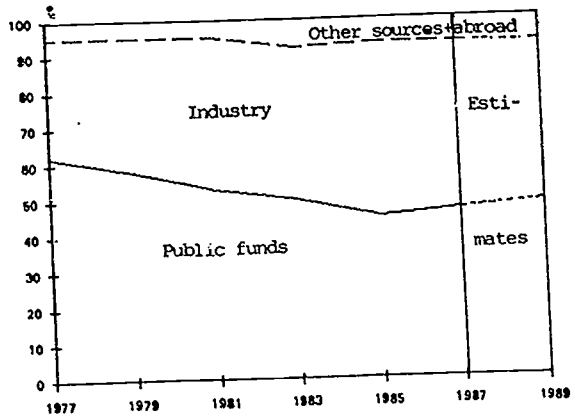
	Source of funds*				
Sector of performance	Industry	Public funds	Other Sources, abroad	Total	Percentage of total
Industry	4000	448	100	4548	44
Institute sector	885	2412	308	3605	35
Higher Education sector	98	1970	98	2166	21
Total in Norway	4983	4830	506	10319	100
Percentage of total	48	47	5	100	
Estimate 1989	5700	5800	600	12100	

* Millions of NOK

Estimates for 1989 indicate that the trend in favour of increased public financing will continue (Cf. Figure 10).

Figure 10

Relative Amounts of R&D Expenditure in Norway, 1977-1987, and Estimates for 1989 by Source of Funding



11.2. New Policy Documents

The report, "On Research", was presented to the **Storting** in 1989 (Report No. 28 (1988-1989). It addressed a variety of issues, such as the organization of R&D, internationalization, ethical questions pertaining to R&D, recruitment of new researchers, and industrial R&D. The earlier 1985 report on research proved to be influential in so far as it gave rise to an interest in science and technology policy in general and in that it specifically defined Norwegian research priority areas.

As the Government wants to strengthen basic research, considerable emphasis is being placed on improving the quality of research and on promoting international research co-operation. The up-grading of basic research is also considered important for the development of applied and industry-oriented research and consequently for industrial development.

Above all, the strengthening of basic research implies the strengthening of the recruitment of new researchers. Norway will be faced with a serious shortage of new researchers in several fields unless important steps are taken. Up to the year 2000, increasing numbers will have to be trained to fill the permanent academic positions that will become vacant in the universities. Expansion in R&D adds to the demand for new researchers. Also in sectors outside the universities, the demand for people with research training is growing.

Industry-related research is given high priority. Measures within priority areas and international co-operation are to a great extent relevant to industrial R&D. In both contexts, emphasis is being placed on long-term strategic research, on the one hand, and on diffusion and innovation, on the other.

Special measures have been introduced to encourage technology transfer to traditional manufacturing industries, which consist largely of small and medium-sized enterprises. Policies focus on competence and network-building. Networks are considered crucial, for they provide communication between companies and research establishments and make possible the joining together of firms in collective R&D efforts. Public procurement policies are being encouraged by a strong increase in special funding.

11.3. Priority Areas

Like many other member countries of the Organization for Economic Co-operation and Development (OECD), Norway has singled out certain priority areas for R&D. These include information technology; biotechnology; new materials; aquaculture; offshore oil, gas technology, and related research; management, organization, and administrative systems; health, environment, and social issues; research related to the dissemination of tradition and culture; and environmental technology.

Most of the priority areas were identified in 1985. Their number is rather high, and a stricter designation of priorities might have reduced them. On the other hand, they secure a broad coverage of research areas that are important for Norwegian economic, social, and cultural development. These programmes have resulted in the creation of new networks for the co-ordination of R&D efforts within each area. Such networks promote co-operation between different sectors and between a variety of R&D institutions. Since the Norwegian R&D system is basically heterogeneous, the creation of such structures is seen as particularly useful.

Although research related to the environment has always been regarded as important, the report by the World Commission on Environment and Development has given new impetus to this area. The Government is continuing to strengthen environmental research stressing the importance of environmental technology. Generally speaking, attempts are being made to integrate the follow-up measures resulting from the Commission's recommendations in existing fields of research rather than treating them as specific priorities.

Eight of the nine priority areas will be evaluated during the 1990-1992 period. Environmental technology, designated as a priority in 1989, is still in its infancy and will therefore not be included in this process of evaluation.

11.4. Recent Structural Development

A number of regional science parks and competence centres were created during the 1980's, usually in close co-operation with one of the four universities or university level colleges, or with some of the regional colleges. There are now

more than seventy such centres. They depend for their income primarily on contract research much of which has been directed towards the needs of regional and local public administration. As a great deal of concern has been expressed about the lack of contact between the centres and local industry, more extensive science park/industry co-operation is an important objective for the future development of these centres.

In order to avoid fragmentation, the need to integrate both the regional research centres and the education institutions into a national network has been stressed. Co-operation as well as local specialization are important aspects of such a network. To help achieve these goals, six temporary regional committees are now being set up to advise the Government on the organization of higher education, research, and the dissemination of research and technology in the individual regions.

11.5. Norway's Research Councils Under Scrutiny

A total of NOK 1746 million was allocated to the research councils in 1989[1]. Of this sum, 48 per cent went to NTNF, 26 per cent to NAVF, 9 per cent each to NLVF and to NFFR, and 7 per cent to NORAS. The allocations include both general and specific allocations to the councils from their respective ministries and funds earmarked by other ministries. The five research councils are central bodies in the organization of Norwegian research. Approximately 25 per cent of the government funds for R&D are channelled through the research councils which play an important role in strategic planning and evaluation.

A central theme in the previously mentioned Report on Research was the need to simplify the organization of Norwegian research. One of the recommendations was that the structure of the research council be reviewed in order to make it more efficient and better adapted to present-day needs.

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[1] The acronyms for these councils are as follows:

NAVF - the Norwegian Research Council for Science and the Humanities (attached to the Ministry of Education and Research)

NFFR - the Norwegian Council for Fisheries Research (attached to the Ministry of Fisheries)

NLVF - the Agriculture Research Council of Norway (attached to the Ministry of Agriculture)

NORAS - the Norwegian Research Council for Applied Social Science (attached to the Ministry of Education and Research)

NTNF - the Royal Norwegian Council for Scientific and Industrial Research (attached to the Ministry of Industry)

Source: Fiscal budget analyses from the Institute for Studies in Research and Higher Education of the Norwegian Research Council for Science and the Humanities.

The recommendation was given parliamentary support, and a review committee was established in March 1990. The committee has ten members, most of whom represent the research community. The committee has been requested to concentrate its report on the following issues and questions:

- a review of research council structure, with recommendations on possible simplifications and other measures to increase efficiency;

- the organization of research policy co-ordination at government level including a description of the tasks of government in relation to the research councils and the research system;

- the design of a flexible organizational structure that can adjust to new responsibilities without the establishment of new executive bodies.

The committee will deliver its report by 1 July, 1991.

11.6. Research Ethics

The new break-throughs in biotechnological research have effectively pushed research ethics towards the top of the science policy agenda. In June 1989 the **Storting** endorsed the recommendation of the 1989 Report on Research for the establishment of national research ethics committees within the following areas:

- medicine in a broad sense ("health and life sciences") and normative academic disciplines, i.e. the social sciences and the humanities;

- natural science/technology including those parts of biotechnology and genetic engineering that do not fall under medicine.

An important function of the committees is to provide information to politicians, to civil servants, and to the general public. The committees will be appointed by the Ministry of Education, Research, and Church Affairs after nominations have been submitted by the research councils. The secretariats of the national committees will be administered by the research councils.

In medical research, five regional ethics committees were established in 1985. The four of these which are advisory bodies, linked to the Faculties of Medicine at the four Norwegian universities, deal with all biomedical research projects that involve research on human beings.

11.7. International Co-operation

Participation in international R&D programmes is an important objective of Norwegian R&D policy. It is closely linked to a much wider effort in favour of the internationalization of the country. Norway has recently joined a series of international research programmes, the Government giving high priority to this type of activity.

One of the most noteworthy developments was the grant to Norway in 1987 of full membership in the European Space Agency. As Norwegian firms are encouraged to join EUREKA projects, the number of such projects with Norwegian participation amounted to 22 in 1989. On the basis of the agreement concluded in 1986 with the European Communities, Norway aims at participating in several EC research programmes. As of March 1990, Norway has full membership in SCIENCE, Protection of the Environment, and in the Medical and Health Research Programme. At the individual project level, Norway participates in many of the EC research programmes in the field of technology.

The internationalization effort covers the whole spectrum of research. Norway has been a long-standing member of the European nuclear research organization, CERN, and has recently become a full member of the European Molecular Biology Laboratory and of the International Agency for Research on Cancer. Through a Nordic consortium, Norway is also member of the European Synchroton Radiation Facility.

The Norwegian research councils have launched a series of special programmes to encourage scientists to visit foreign laboratories and to invite foreign scientists to visit Norway. Special grants through the Ministry of Education, Research, and Church Affairs enable students to receive parts of their education abroad.

12. STUDENT SOCIAL AND FINANCIAL BENEFITS

12.1. Grants and Loans

The State Educational Loan Fund was established in 1947. It is intended to contribute to equality so that educational participation does not depend upon geographical location, age, sex, or economic or social background. It also contributes to the creation of satisfactory working conditions for students and to the supply of qualified manpower.

The present system of student aid, which is based primarily on an Act of Parliament of 1985, covers students in upper secondary and higher education who follow any type of course in Norway or in another Nordic country lasting more than three months. For Norwegian students in non-Nordic countries, financial support is given on special conditions.

The Act regulates the transfer of grants and loans to individual students. For students below the age of 19, the amount is means tested against the income of their families; in the case of students over nineteen, only their own income is means tested. The practical result is that the overwhelming majority of students in higher education quality for loans, while a somewhat smaller majority quality for grants.

A total of 364,000 students were estimated as being entitled to student aid in 1990-1991. Of these, 217,000 applied for, and 173,000 received grants, while 142 000 applied for, and 137,000 received loans.

The average size of each grant was about NOK 9,500 while the average size of each loan was about NOK 37,000. According to one estimate, about 80 per cent of the students enrolled in higher education institutions received loans.

The loan to which an unmarried student living outside his family home is entitled was about NOK 45,000 in 1990-1991. Students who have family commitments are entitled to somewhat larger stipends. The same is also true for Norwegian students outside the Nordic countries. Generally speaking, students are granted incomes corresponding to somewhat more than the minimum income of single persons under the Act governing old age pensions.

In order to be considered for a grant or a loan, a student must show that he or she is progressing at a reasonable rate according to rules laid down by the Loan Fund. In 1990, the State Educational Loan Fund disbursed more

than NOK 8.2 billion in loans and grants, or about as much as the total budget for higher education institutions. Of the payments, somewhat more than NOK 3.3 billion consisted of grants and subsidies for interest payments.

Student loans are free of interest and are not repayable while the student is studying. After that, the loans must be repaid over a maximum period of twenty years. Annual payments should not, however, exceed a certain percentage of a person's income. If they do, the period of repayment may be extended up to 30 years.

The repayment of loans may be postponed when, because of special circumstances, the loantaker is unable to make payments. In special cases, the loan may be written off. For students who undertake post-graduate education, additional loans are partly written off upon the successful completion of their studies.

In 1990, the interest rate on student loans was 11,5 per cent, which, due to inflation, corresponds to a real interest rate of about seven percent. This rate was two to three per cent lower than the usual rate for loans from commercial banks, the government subsidy filling the gap and thus constituting an important part of the student aid programme.

In real terms, government aid to students in the form of grants and easy-to-obtain loans has increased somewhat over the last ten years, even in terms of payments per student. At the same time, however, large increases in interest rates during the same period has had the effect of reducing the value of student loans. Until 1982, the real interest rate (corrected for inflation) of student loans was in fact a negative one. A strong increase in government subsidies for interest payments has not compensated for this development.

Students have never applied for the full value of the loans to which they are entitled; indeed, the gap widened during the 1980's. This trend may have resulted from the increased propensity of students to work part time in addition to studying. The unwillingness of students to undertake postgraduate study in certain fields is also attributed to the amount indebtedness required. The partial writing off of loans for students in postgraduate studies is an attempt to remedy the problem.

12.2. Other Benefits

In addition to the programme of grants and loans, the Government also supports students through certain other measures. Students receive a fifty per cent reduction in the fares for surface **travel** over long distances. These subsidies amounted to about NOK 50 million in 1990. Subsidies for student **housing** amounted to about NOK 105 million during the same years. An increase to NOK 156 million was proposed for 1991.

About NOK 58 million were provided in 1990 as a government subsidy to the operation of student welfare organizations, which also receive about NOK 64 million in complementary services from the institutions. Such organizations exist in most of the localities having higher education institutions. The directive bodies of these organizations are usually made up of a majority of elected student representatives. The total welfare activities of these organizations amounted in 1990 to NOK 7436 million financed mostly by income generated by the services offered.

The tradition of student aid policies in Norway has been that the aid should be differentiated according to the actual costs incurred by the individual student and by his economic situation. Until recently, student aid has not normally been used as an instrument to direct students towards specific course programmes. Some minor deviations from this approach have emerged in recent years. A special programme of study abroad for technology and economics students offers more generous conditions than usual. This programme is eventually expected to involve about 3,000 students. The special conditions for postgraduate students mentioned above should be cited in this context, along with the special reductions in student loans for graduates who accept employment in the northernmost county of Norway. Nevertheless such examples should be viewed as deviations from the general rule of non-discrimination with regard to study areas in student aid policy.

Note should also be made of the fact that student aid is not used as a means for rewarding outstanding study performance. Everyone who is qualified to be admitted to higher education is equally entitled to student aid under the conditions stipulated for such aid.

Finally, reference is made to the previous system of tax reduction for educational expenditures. This socially regressive system was abandonned around 1960 in favour of an expanded system of direct student aid.

13. INTERNATIONAL CO-OPERATION WITHIN EDUCATION

International co-operation is of vital importance for small countries. It may vary from informal contacts with colleagues in other countries and participation in international conferences and gatherings to formal bilateral and multilateral agreements. Bilateral cultural agreements permit the mutual exchange of educational experience and expertise between educationists in Norway and in various other countries. The multilateral co-operation of Norway in the educational field includes participation in activities of such international organizations as the Nordic Ministerial Council, the Council of Europe, the OECD, and the United Nations, UNESCO in particular.

As could be expected, Norway has relatively close contacts with the other Nordic countries. The Nordic Ministers of Education meet regularly within the framework of the Nordic Ministerial Council. In performing its activities, the Nordic Ministerial Council conducts a permanent dialogue with the parlamentarians meeting in the Nordic Council. The Nordic Ministerial Council has its own annual programme and a specific budget, about NOK 200 million for cultural purposes including a wide range of projects and even permanent institutions, covering primary, secondary, adult, as well as higher education.

A Nordic Action Programme on Cultural Co-operation, signed by the ministers in the spring of 1988, aims at increased student mobility and exchanges among Nordic countries. A Nordic exchange programme for students and teachers, NORDPLUS, has been established in order to realize this aim, and a group of experts is working to identify and to abolish economic, administrative, and social hindrances to higher student mobility.

At European level, Norway has for many years participated in the educational programmes of the Council of Europe, under the direction of the Council for Cultural Co-operation (CDCC). The European Ministers of Education normally meet every two years to discuss issues of common interest and to adopt common guidelines for specific areas of education. The CDCC, in addition to drawing up its own programme, also adopts draft recommendations to be submitted to the Committee of Ministers for approval. Norway also participates in the European data network in education (EUDISED) co-ordinated by the Council of Europe.

Within the framework of the OECD, Norway participates in the Education Committee, in various activities initiated by the Centre for Research and Innovation (CERI), and in a Decentralized Programme on Educational Construction. In 1987, an OECD expert group undertook an evaluation of the

action programme on computer technology. The resulting report was published (OECD, 1987). In addition, the education policy of Norway was reviewed by the OECD in 1987. Based on the resulting report of the OECD examiners, a review session took place in the OECD Educational Committee in the spring of 1988.

As of 1990, Norway is participating in the EC- programme COMETT-II, on educational co-operation university/enterprises within the field of technology. Along with the other EFTA-countries, Norway has begun to negotiate terms for participating in the EC-programme, ERASMUS.

Norway is taking active part in educational co-operation under the auspices of UNESCO. In collaboration with the other Nordic countries, Norway intiatiated a redrafting of the programme and budget of the organization in 1986-1987. The Nordic countries have also been engaged in UNESCO activities intended to eliminate illiteracy before the end of the century. As of 1984, Norway has been participating in the work of the Associated Schools' Project (ASPRO). A limited number of compulsory schools and colleges of education (25 in all) were involved in the network during an experimental period from 1985 until the end of the 1987-1988 school year. An evaluation of Norwegian participation in the project having been undertaken, the possibilities of further participation are now being discussed.

Norway, a full member of the IBE since 1972, has participated regularly in the sessions of the IBE . The Norwegian Educational Library acts as an information and documentation centre on behalf of the Ministry of Education vis-à-vis the IBE.

The increasing internationalization of society imposes new requirements on education. In formulating its national education policy, Norway has to take international trends and devellopments into account, without, however, sacrificing its national cultural traditions and its identity. School curricula stress on developing an international outlook and on educating for international understanding.

14. LIBRARIES AND REFERENCE SERVICES

Norway has more than 300 general and specialized research libraries. Many of these have been built up in association with higher education institutions, including individual colleges within the regional system, and are thus an integral part of the activities of these institutions. The scope and activities of these libraries will vary according to the fields of study offered at the various institutions.

The largest of the libraries is that of the University of Oslo, established in 1811. It also serves as the Norwegian National Library. The Parliament has decided that in the future the National Library shall be organized as a separate institution with its headquarters in Oslo. One unit of the National Library was established in Mo i Rana in Northern Norway in 1989.

This Library has a legal obligation to collect, to register, and to preserve all publications printed in Norway and all Norvegica published abroad. Accordingly, it is responsible for the database and the printed editions of the Norwegian National Bibliography (**Norsk bokfortegnelse**). It is also responsible for maintaining the computerised Norwegian Union Catalogues of Periodicals and Foreign Books in Norwegian Libraries.

The total number of books and periodicals in the Oslo University Library is about 4.2 million (1988). In addition, the library holds music scores, audiovisual material, manuscripts, pictures, maps, and microfilms. In 1988, the library had a permanent staff of about 300 and also a number of temporary staff members.

When the University of Bergen Library was created in 1948, the library of the Bergen Museum became part of the foundation stock of the new university library. Its history goes back to 1825 when the museum was founded. In 1989 the University of Bergen Library had more than one million books and periodicals as well as maps, newspapers, manuscripts, and documents. In addition, approximately 400,000 books are houred in the different departmental libraries. The library has the right to claim one copy of each publication produced in Norway.

At the University of Trondheim, the Library of the Royal Society and the Library of the College of Arts and Science are organized on a joint basis. The library of the Norwegian College of Advanced Technology, on the other hand, still forms an independent unit. In addition, a separate library service for the Faculty of Medicine has been established.

The library of the Royal Norwegian Society of Science is as old as the Society itself, that is to say over 200 years old. It includes books on all subjects,

including literature, but the main emphasis is on natural history, archaeology, and history. The percentage of older works is higher in this library than is the case with equivalent libraries elsewhere in this country. This library also has the right to claim copies of all books published in Norway.

In 1989 the collections of the Royal Society numbered approximatively 700,000 books plus special collections of sheet music, maps, newspapers, pictures, and manuscripts.

The library of NTH (The Norwegian College of Advanced Technology), founded in 1910, consists of a main library and several divisional and departmental libraries. In 1987, the library had over 940,000 volumes and approximately 8,000 current periodicals. In addition, the library has certain special collections. The works represent the subject areas taught at NTH, that is to say technical subjects and the exact sciences which form their basis. A typical feature of this library is the marked preponderance of recent works.

In 1969, the National Library Service was established to increase the efficiency of specialized library and documentation services. This service is responsible for planning, co-ordination, and co-operation with regard to scientific and specialized libraries, and it is also responsible for the coordination of Nordic and international co-operation. The National Library Service is considered a part of the joint administration for universities and colleges, but it also has a duty to supervize the other specialized libraries. It is headed by the State Librarian, who is the highest professional authority in this field. The Ministry of Education, Research, and Church Affairs appoints a special National Library Council to serve as an advisory body for the State Librarian and for the Ministry itself.

15. ANNEXES

15.1. Administrative Offices:

- The Ministry of Education, Research, and Church Affairs; P.O. Box 8119, 0032 Oslo 1
- The Ministry of Agriculture, P.O. Box 8007 Dep.; 0030 Oslo 1
- Central Bureau of Statistics; P.O. Box 8131 Dep., 0031 Oslo 1
- The State Educational Loan Fund; P.O. Box 195; Okern; 0510 Oslo 5

15.2. Institutions of Higher Education

15.2.1. The Universities

- University of Oslo; P.O. Box 1072 Blindern; 0316Oslo 3
- University of Bergen; P.O. Box 25, 5027 Bergen-Univ
- University of Trondheim; P.O. Box 4392, 7001 Trondheim
- University of Tromsø; P.O. Box 635, 9001 Tromsø

15.2.2. The University-Level Specialized Colleges

- The Oslo School of Architecture; P.O. Box 6768 St. Olavs pl.; 0130 Oslo 1
- The Norwegian School of Economics and Business Administration, Hellev. 30; 5035 Bergen-Sandviken
- The Norwegian College of Physical Education and Sport; P.O. Box 40 Kringsjå, 0807 Oslo 8
- The Norwegian State Academy of Music; P.O. Box 5190 Majorstua; 0302 Oslo 3
- The Norwegian College of Agriculture - NLH; 1432 Ås
- The Norwegian College of Veterinary Medicine; P.O. Box 8146 Dep.; 0033 Oslo 1

15.2.3. Non-University Higher Education Institutions

15.2.3.1. Specialized Professional Schools

- National College of Ballet; Tjuvholmen, Bygn. B; 0250 Oslo 2
- National College of Art, Crafts, and Design; Strømg. 1; 5015 Bergen
- National College of Art, Crafts, and Design; Ullevålsveien 5; 0165 Oslo 1
- The State Academy of Art; St. Olavs g. 32; 0166 Oslo 1

- The Western Norway Academy of Art; C. Sundts g. 53; 5004 Bergen
- The State Academy of Art; Asta Hansteens vei 22; 7046 Trondheim
- National College for Operatic Art; Tjuvholmen, Bygn. B; 0250 Oslo 2
- National College for Dramatic Art; P.O. Box 1509 Vika; 0117 Oslo 1

15.2.3.2. Regional Colleges:

- Agder College; P.O. Box 607; 4601 Kristiansand
- Agder College of Engineering; P.O. Box 94; 4891 Grimstad
- Finnmark College; P.O. Box 301; 9501 Alta
- Hedmark College; P.O. Box 104; 2451 Rena
- Harstad College; P.O. Box 2130; 9405 Kanebogen
- Nordland College; P.O. Box 6003; 8016 Mørkved
- Rogaland College; P.O. Box 2557 Ullandhaug; 4001 Stavanger
- Møre og Romsdal Colleges; P.O. Box 308; 6401 Molde/ P.O. Box 188; 6101 Volda
- Nord-Trøndelag College; P.O. Box 145; 7701 Steinkjær
- Oppland College; P.O. Box 1004 Skurva; 2601 Lillehammer
- Sogn og Fjordane College; P.O. Box 39; 5801 Sogndal
- Telemark College; 3800 Bø i Telemark
- Trondheim College of Economics and Business Administration; Jonsvannsv. 82, 7017 Trondheim
- Østfold College; Os Allé 9; 1750 Halden

15.2.3.3. Other Colleges

- Norwegian College of Journalism; P.O. Box 8167 Dep.; 0034 Oslo 1
- The Norwegian Colleges of Hotel Management; P.O. Box 2536 Unllandhaug; 4004 Stavanger
- The Norwegian School of Library and Information Science; Dælenggt. 26; 0567 Oslo 5

15.3. Regional Boards of Higher Education

The Regional Board of Higher Education in:

- Agder; P.O. Box 268; 4891 Grimstad
- Buskerud; P.O. Box 251; 3601 Kongsberg
- Finnmark; Knudsengården; 9500 Alta
- Hedmark; Skoleg. 12; 2300 Hamar
- Hordaland; Lars Hilles g. 30; 5008 Bergen
- Møre og Romsdal; P.O. Box 325; 6101 Volda
- Nordland; P.O. Box 389; 8001 Bodø

- Nord-Trøndelag; P.O. Box 169; 7701 Steinkjer
- Oppland, Statsetatenes Hus; Gudbrandsdals v. 170/172; 2600 Lillehammer
- Oslo og Akershus; P.O. Box 8178 Dep.; 0034 Oslo 1
- Rogaland; P.O. Box 2517 Ullandhaug; 4001 Stavanger
- Sogn og Fjordane; P.O. Box 163; 5801 Sogndal
- Sør-Trøndelag; P.O. Box 1333 Blussuvoll; 7002 Trondheim
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- Tromsø; Prestengg. 34; 9000 Tromsø
- Vestfold; P.O. Box 631; 3101 Tonsberg
- Østfold; Storg. 24; 1750 Halden

15.4. National Educational Councils

- Adult Education Council; P.O. Box 8170 Dep.; 0034 Oslo 1
- Teacher Training Council; P.O. Box 8150 Dep.; 0033 Oslo 1
- Engineering Education Council; P.O. Box 8150 Dep.; 0033 Oslo 1
- Council for Higher Education in Health and Social Work; P.O. Box 8150 Dep.; 0033 Oslo 1
- Sami Educational Council; P.O. Box 143; 9520 Kautokeino

15.5. Research Libraries

- The University of Oslo Library; Drammensv. 42; 0255 Oslo 2
- The University of Bergen Library; Møhlenprisbakken 1; 5006 Bergen
- The University of Trondheim Library; 7030 Trondheim
- The National Library Service; P.O. Box 2439 Solli: 0202 Oslo 2

15.6. Research Councils

- The Norwegian Research Council for Science and the Humanities (NAVF); Sandakerv. 99; 0483 Oslo 4
- The Royal Norwegian Council for Scientific and Industrial Research (NTNF); P.O.Box 70 Tåsen; 0801 Oslo 8
- The Agriculture Research Council of Norway (NLVF); P.O. Box 8154 Dep.; 0033 Oslo 1
- The Norwegian Council for Fisheries Research (NFFR); 7004 Trondheim
- The Norwegian Research Council for Applied Social Science (NORAS); P.O. Box 8195 Dep.; 0034 Oslo 1

15.7. Student Unions

- National Union of Norwegian Students (NSU); Løkkev. 7; 0253 Oslo 2
- Norwegian Association for Students in Technical Education; Skippergata 2l; 0154 Oslo 1

15.8. Student Welfare Organizations

The Student Welfare Organization in:

- Finnmark, Høgskolen, and Nyland; 9500 Alta
- Tromsø;, Breivika senter; 9000 Tromsø
- Bodø; P.O. Box 6033; 8016 Mørkved
- Narvik; P.O. Box 385; 8501 Narvik
- Nord-Trøndelag; Kirkeg. l; 7600 Levanger
- Molde; P.O. Box 308; 6401 Molde
- Sunnmøre; P.O. Box 36; 6100 Volda
- Bergen; P.O. Box 8/10 Universitetet; 5027 Bergen
- Rogaland; P.O. Box 2506 Ullandhaug; 4001 Stavanger
- Kristiansand; P.O. Box 757; 4601 Kristiansand S.
- Nedre Telemark; Kjølnes; 3900 Porsgrunn
- Vestfold; Baglerg. 3; 3100 Tønsberg
- Buskerud; P.O. Box 215; 3601 Kongsberg
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