

Universities 2004

Annual Report

Ministry of Education publications 2005:13



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Undervisningsministeriet

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Universities

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University of Joensuu
University of Jyväskylä
University of Kuopio
University of Lapland
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Helsinki School of Economics
Swedish School of Economics
and Business Administration
Turku School of Economics
and Business Administration
Academy of Fine Arts
Sibelius Academy
Theatre Academy
University of Art and Design Helsinki

Contents

| | |
|---|-----------|
| Finnish universities in 2004 | 6 |
| Objectives | 8 |
| Quality and quality assurance at universities | 11 |
| Student selection and undergraduate studies | 14 |
| Selection improved | 14 |
| Reform of degree programme advanced | 15 |
| Virtual University teaching strengthened | 15 |
| Number of degrees completed increased | 16 |
| Postgraduate education | 17 |
| Postgraduate education developed | 17 |
| Number of doctorates increased | 18 |
| Research | 19 |
| Research funding developed favourably | 19 |
| Research system evaluated | 20 |
| International cooperation intensified | 21 |
| Open university and continuing education | 22 |
| Steering and structural development | 23 |
| Legislation amended | 23 |
| Prerequisites for research and teaching strengthened | 23 |
| Supplementary funding remains the same | 24 |
| Operating conditions improve with new premises | 25 |
| Educational provision diversified | 25 |
| International and European cooperation | 26 |
| International cooperation reinforced | 26 |
| Increase in foreign undergraduate students | 27 |
| Social and regional impact of the universities | 28 |
| Employment | 28 |
| Statistics | 29 |
| Addresses | 36 |

2004

2004 was a year of sweeping changes and a period of re-evaluation and development of operations at Finnish universities. Several processes of reform were under way concurrently, which had a profound effect on operations. The aim of these reforms was to develop the quality, impact and content of operations by universities to better meet the changing needs and challenges of higher education and research.

In accordance with the amendment of the Universities Act, which was approved in summer 2004, it was decided that the universities would change over to a two-stage degree system, extend their responsibilities to cover interacting with society at large and the use of research results, promoting internationalisation, and the structure of senior management. The extension of the act on the development of higher education institutions was also approved at the same time. The act will ensure an increase in the universities' operating expense appropriations by at least EUR 20 million per annum, excluding the impact of pay rises. This will enable a stable performance agreement period in 2004-2006.

The Science & Technology Policy Council of Finland evaluated Finland's public research system in the course of 2004. From the point of view of the universities, its key point was rapporteur Jorma Rantanen's report entitled Review of the structure of university and polytechnic research. The aim is to implement the review's proposals in the steering and development of the universities over the next few years.

Progress was made in Finland on the implementation of the Bologna process with the help of the amended University Act. It will entail the launch of the two-stage degree system in August 2005, the re-planning of all degree programmes and the promotion of internationalization at the universities. Quality is highlighted in the formation of the European Higher Education Area. In the same context at the end of 2004, the EU Commission presented a proposal for the improvement of European cooperation to ensure the quality of higher education institutions. Also, all Finnish universities strengthened their quality assurance procedures in order to prepare themselves for the demonstration of quality as required by international cooperation.

International cooperation improved noticeably in 2004. The number of foreign degree students grew by 6% on the previous year. Also the number of student exchanges increased; 4,341 foreign university students studied in Finland while 4,279 Finnish students took part in exchange programmes abroad. In international cooperation Finnish universities have proved their appeal as they attract more students to Finland than there are students leaving Finland. English language instruction was further increased.

Results management at universities was implemented using a revised results management system and the financing model incorporated in it. The provision of public services was adopted as a new criterion for the calculation of basic funding. Procedures to provide written feedback for universities by the Ministry of Education were further developed. The feedback took a stand on strategic development work, the use of quality assurance

and evaluation results, internationalization, research and postgraduate education at the universities. As regards the development of education, the feedback included preparation for the new degree system and the development of studies, student selection and the implementation of life-long learning. In addition, feedback was given on the public role of universities, balancing the books and the quality of other performance reports, and the development of cost calculation. Results management at the universities has been improved in accordance with the new development targets for the civil service concerning the balancing of the books and results management.

A total of 12,588 Master's degrees and 1,399 doctorates were completed at Finnish universities in 2004, which is more than ever before. The target for doctorates was virtually met in the first year of the new performance agreement period due to more effective postgraduate education, increase in research at universities and universities' investment in the quality of their own postgraduate education. 90% of the target for Master's degrees was met. The number of degrees is expected to grow further over the next years of the agreement period. More effective academic counseling, development of study processes and personal study plans support the development and completion of studies.

In 2004, the development of the operations of Finnish universities has focused on improving their impact, quality assurance, ensuring the efficiency of study processes and the operating environment of universities. During the year under review, the role of the universities in Finnish society at large and as part of people's welfare and personal development increased in importance. The position of Finnish universities can be maintained and further strengthened by increasing resources and carrying out current and planned internal development within the universities.

Helsinki, March 17, 2005

Markku Mattila
Ministry of Education
Director of University Division

Finnish Universities in 2004

Universities

Multi-faculty universities 10
Specialized universities 6
Art academies 4

Students

New students 20,500
New students as a percentage of school leavers 31.5%
Undergraduate students 149,200
Postgraduate students 22,100
Students, total 174,300

Degrees

Bachelor's degrees 2,700
Master's degrees 12,600
Licentiate 560
Doctorates 1,400

Personnel

Teachers on budget funds 7,940
Teachers on external funding 620
Research personnel on budget funds 1,180
Research personnel on external funding 5,110
Students in graduate schools on budget funds 1,030
Students in graduate schools on external funding 540
Other staff, on budget funds 9,410
Other staff, on external funding 4,690

Funding

Budget funding and building investments EUR 1,235 million
Supplementary funding EUR 690 million
Budget funding, percentage of GDP at market prices 0.82%

Funding decisions:

Academy of Finland funding for universities EUR 144 million
National Technology Agency of Finland (Tekes) funding for universities EUR 91 million

Premises

Premises (1,000m² usable space) 2,070

Open university

Students 82,300

Continuing education

Students 87,600

Indicators for 2004*

New students per teacher 2.6
Students per teacher 22
Master's degrees per teacher 1.6
Doctorates per professor 0.6
Budget expenditure (excluding cost of premises)
per student EUR 5,615

**In relation to personnel paid from budget funding*

Indicators for social impact

Employment and/or placement in continuing education (degrees completed within the past three years):

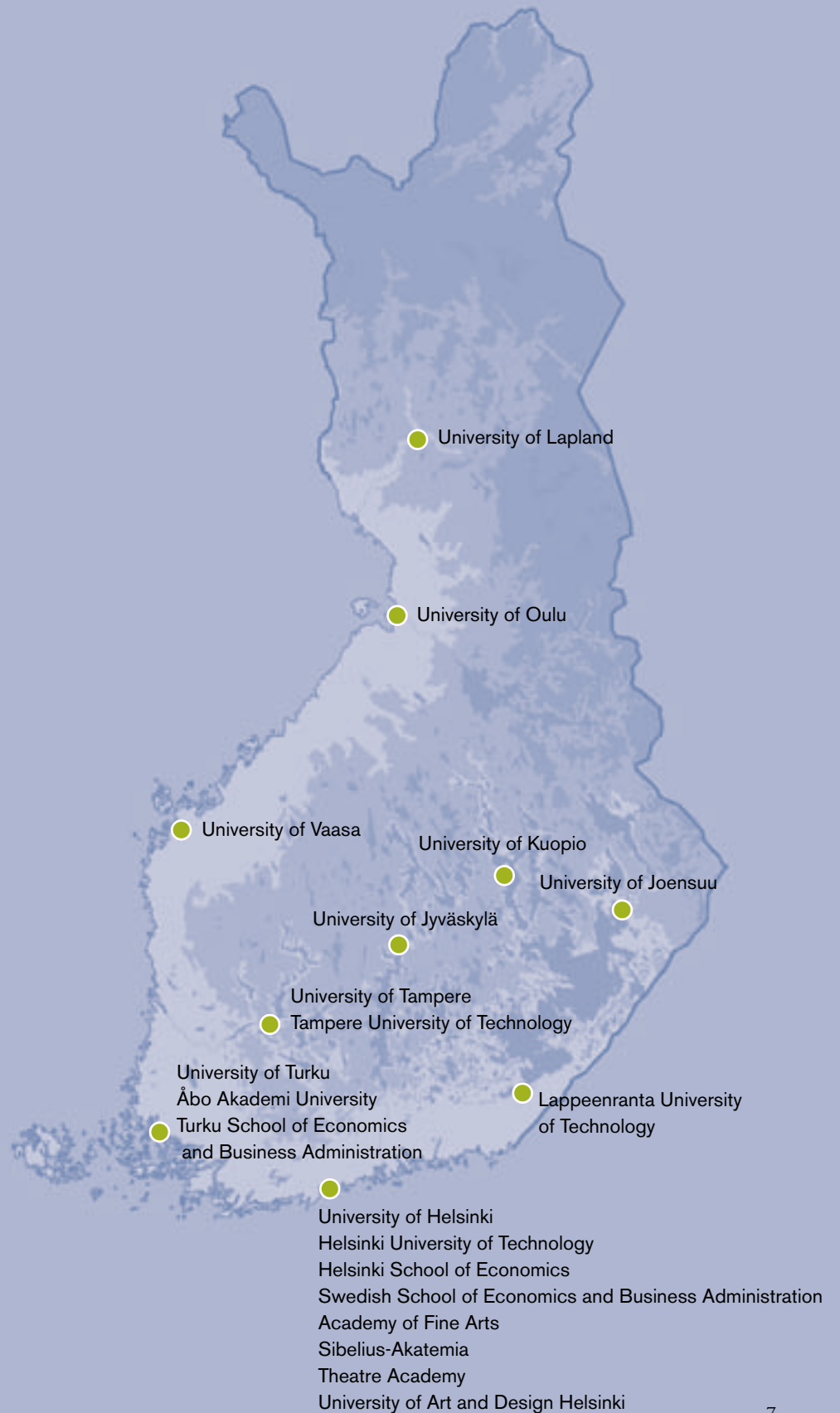
- 92.4% among holders of a Master's degree (2002) (2001:92.8%)
- 91.9% among holders of a doctorate (2002) (2001: 91.8%)

Placement in education:

- an average of 32% (2003) of new students were upper secondary school graduates of the same year (2002: 32.5%)

Drop-out rate at universities:

- 5% of Bachelor's or Master's degree students dropped out of degree programme (2003)
- 4.8% of Bachelor's or Master's degree students (2003) dropped out of university altogether and were not placed in other education programme.





Objectives

In 2003-2008 the focus of attention in education and research will include:

- ensuring the basic right to study for all
- improving the quality and impact of education
- improving the effectiveness of the education system
- improving the rate of study completion
- closer ties with working life
- supporting children and young persons
- promotion of adult education
- strengthening of research activities
- development of teaching and learning environments
- advancement of international cooperation
- promotion of equality and prevention of exclusion and
- promotion of education and training for immigrants.

In universities, the emphasis will in addition be on:

- renewal of the degree structure and development of teaching
- student selection
- regional effectiveness
- improving the quality of education and developing appropriate quality systems
- promotion of internationalization in education and research
- strengthening postgraduate education
- development of the quality of research activities and the evaluation of effectiveness.

Targets set for the universities in 2004

Quality targets

Universities aim to advance cultural, social and economic well-being in Finnish society. Another aim is to reach a high level and quality of research, postgraduate education, teaching and artistic endeavour internationally. Universities will continue to work to improve all-round quality and methods for its achievement. Universities will also develop their workplace communities in a way that will improve their competitiveness as employers and increase personnel satisfaction and working ability.

Universities will strengthen the prerequisites for professional research careers by focusing on the promotion of equality among the scientific community. Postgraduate education will be developed as the main channel for a doctor's degree, which is the primary aim of continuing scientific education. Concerted efforts will be made to recruit international students and researchers onto Finnish postgraduate programmes. The aim for 2006 is that 10% of all postgraduate students should come from abroad.

Individual universities will improve student selection by compiling their own development strategies for student selection to accelerate study placement, reduce the number of selection units and to lighten selection procedures.

Teaching quality and academic planning, counselling and monitoring procedures will be developed to improve study completion rate and shorten study times, particularly in the humanities, mathematics and science, and technology. Universities will be introducing a system of personal study plans to be drawn up with the student in all fields of study by the beginning of 2006. Universities will also prepare and carry out a two-stage degree reform and revise study durations and contents to allow for a flexible changeover to the new structure at the beginning of the autumn term in 2005.

In their efforts to steer educational provision, universities will pay particular attention to the changing

needs of the national health project, teacher training and information technology fields. Steering of educational provision will make use of the potential provided by structural development.

Universities will intensify and increase international cooperation and networking in a way that will make Finnish universities competitive and active players and respected cooperation partners, particularly in European higher education and research. Universities will also increase cooperation with Russia and strengthen Finnish expertise on Russia.

Universities will increase their provision of instruction in English in areas where they are strong, focusing on the quality and methods of teaching. In academic counselling the special needs of international students will be taken into account. Finnish/Swedish language teaching and Finnish culture for foreign degree students will be increased.

Universities will strengthen regional vitality by networking with the key actors in the regions. Regional branch universities and other regional operations by the universities will be merged into sufficiently large entities to ensure a high standard of quality and impact. Universities will also develop interaction with business and industry by improving their business expertise, innovation services and commercial exploitation of research findings. The universities' potential to support private enterprise will be strengthened.

The universities' role in adult education will be clarified. Universities will promote job creation and educational equality through their adult education programmes. Their regional development policy will support the needs of the regions by providing a variety of adult education programmes. The potential of adults for completing a degree will be advanced through Master's degree programmes and the provision of open universities.



Quantitative targets

Numbers of new university students will be kept at the 2003 level. The aim is to accept 22,500 new students annually, specialized selections included. The annual quota for new degree course students via open-university programmes is 1,240 students.

Over the period 2004-2006, the universities are aiming at an average of 14,064 Master's degrees and 1,450 doctorates. Annually, a total of 5,415 students study abroad for longer than three months. The objective is for an average of 20,000 students to study through the open university on a full-time basis.

Resources

Universities will be expanding their financing base by supplementary funding in addition to direct budget funds. Supplementary funding must support the universities' basic mission and related targets.

Quality and quality assurance at universities

Quality assurance systems and their international comparability were developed with the aim of ensuring the competitiveness of Finnish universities.

Quality of university operations was further promoted by supporting quality units and centres of excellence in education, adult education, research and artistic activities, by improving evaluation and quality assurance systems, and by improving the useability of the evaluations for the development of the universities' operations. The working group set up to study the quality assurance systems at higher education institutions and their international comparability completed its work in February 2004.

The Finnish Higher Education Evaluation Council (FINHEEC) evaluated the degree programme in social work at universities and the social services degree at polytechnics and completed a follow-up evaluation of the information industry education programme. FINHEEC also began the development and piloting of the quality assurance systems at higher education institutions and their evaluation.

The Finnish Higher Education Evaluation Council named units of quality were:

University of Helsinki:

- Department of Finnish
- Department of Political Science
- Department of Slavonic and Baltic Languages and Literatures

University of Joensuu:

- Faculty of Forestry

University of Jyväskylä:

- Chydenius Institute, class teacher training for mature students
- Department of Physics

University of Kuopio:

- Degree programme in medicine

University of Oulu:

- Department of Biology
- Department of Dentistry
- Department of Process and Environmental Engineering

University of Tampere:

- Department of History

University of Turku:

- Faculty of Law
- Psychonet (in cooperation with the Universities of Helsinki, Joensuu, Jyväskylä, Tampere and Åbo Akademi University)

University of Vaasa:

- Department of Management and Organization

Helsinki University of Technology:

- Degree programme in information processing science

Lappeenranta University of Technology:

- Department of Industrial Management

Swedish School of Economics and Business Administration:

- Management and organisation

Sibelius Academy:

- Department of Folk Music

Theatre Academy:

- Department of Sound and Lighting Design

University of Art and Design Helsinki:

- Media lab

The Arts Council of Finland named centres of excellence were:

University of Tampere:

- Actor's Training Department

Academy of Fine Arts:

- Department of Media Arts

University of Art and Design Helsinki:

- Department of Interior Architecture and Furniture Design

The Academy of Finland selected the following units as centres of excellence in research:

University of Helsinki:

- Ancient and Medieval Greek Documents, Archives and Libraries
- Applied Microbiology Research Unit
- Centre for Activity Theory and Developmental Work Research
- Developmental Biology Research Programme
- Helsinki Bioenergetics Group
- The Metapopulation Research Group
- Plant Molecular Biology and Forest Biotechnology Research Unit
- Programme of Cancer Biology
- Programme of Molecular Neurobiology
- Programme on Structural Virology
- Research Unit for Variation and Change in English
- Research Unit on Economic Structures and Growth

University of Helsinki and University of Jyväskylä:

- History of Mind Research Unit
- Research Unit of Geometric Analysis and Mathematical Physics

University of Helsinki, Tampere University of Technology, Helsinki University of Technology, University of Kuopio and University of Oulu:

- Tissue Engineering and Medical, Dental and Veterinary Biomaterial Research Group

University of Helsinki and Åbo Akademi:

- Research Unit on the Formation of Early Jewish and Christian Ideology

University of Helsinki and Helsinki University of Technology:

- From Data to Knowledge Research Unit

University of Helsinki, University of Kuopio and the Finnish Meteorological Institute:

- Research Unit on Physics, Chemistry and Biology of Atmospheric Composition and Climate Change

University of Helsinki, Helsinki University of Technology, and Hospital District of Helsinki and Uusimaa:

- Helsinki Brain Research Centre (HBRC)

University of Helsinki, National Public Health Institute and National Veterinary and Food Research Institute (EELA):

- Centre for Environmental Health Risk Assessment

University of Helsinki, National Public Health Institute and Samfundet Folkhälsan:

- Center of Excellence in Disease Genetics

University of Joensuu:

- Research Unit for Forest Ecology and Management

University of Jyväskylä:

- Evolutionary Ecology
- Centre of Excellence in Nuclear and Condensed Matter Physics at the Department of Physics
- The Human Development and its Risk Factors Programme

University of Kuopio:

- Centre of Excellence for Research in Cardiovascular Diseases and Type 2 Diabetes

University of Oulu:

- Collagen Research Unit

University of Oulu and University of Helsinki:

- Centre of Population Genetic Analyses

University of Tampere and University of Helsinki:

- Finnish Research Unit for Mitochondrial Biogenesis and Diseases (FinMIT)

University of Turku:

- BioCity, Cell Surface Receptors in Inflammation and Malignancy
- Research Programme on Male Reproductive Health

Åbo Akademi University:

- Formal Methods in Programming
- Process Chemistry Group

Helsinki University of Technology:

- Computational Condensed Matter and Complex Materials Research Unit (COMP)
- Low Temperature Laboratory: Physics and Brain Research Units
- Neural Networks Research Centre
- Research Centre for Computational Science and Engineering
- Smart and Novel Radios Research Unit

Tampere University of Technology:

- Institute of Hydraulics and Automation
- Signal Processing Algorithm Group

Helsinki University of Technology, University of Helsinki and University of Turku:

- Bio and Nanopolymers Research Group

Technical Research Centre of Finland:

- Technical Research Centre of Finland, Industrial Biotechnology

The centres of excellence in adult education were:

- University of Helsinki
- University of Jyväskylä
- University of Oulu
- University of Vaasa
- University of Art and Design Helsinki



Student selection and undergraduate studies

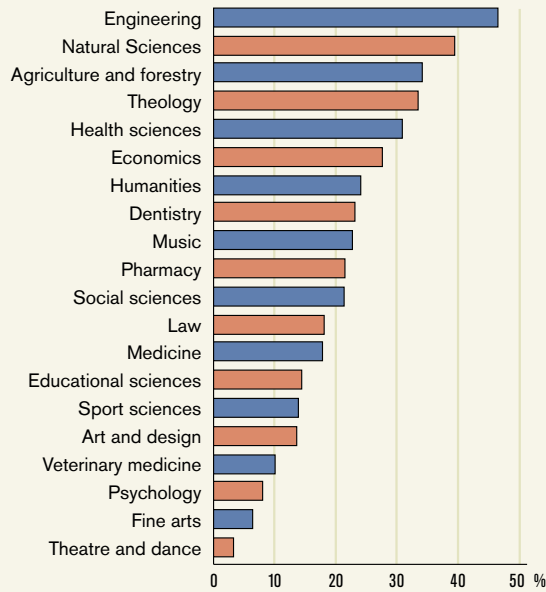
Selection improved

Student selection by universities was improved to accelerate study placement and to lighten selection procedures. A rapporteur appointed by the Ministry of Education proposed the establishment of a joint application procedure for the universities. In their opinions, universities supported the proposal and in August the Ministry of Education set up a project group for the creation of the procedure, which is scheduled to be ready in spring 2005. The aim is that the joint application procedure will be introduced in the universities as of the academic year 2007-2008.

During the year under review, the universities were also implementing their own student selection strategies to improve study placement, to reduce the number of selection units and to lighten selection procedures. The key tools for this included lighter entrance examinations, harmonization of points systems, increased selection based on school reports, fewer selection units and closer cooperation. A joint selection system was introduced in commercial sciences. The planning of a new joint selection system was also introduced in the field of education. The Ministry of Education helped to improve student selection for universities by allocating project funding for the development of student selection procedures. A separate report was compiled on issues related to reconciling compulsory military service and placement and studies in higher education institutions.

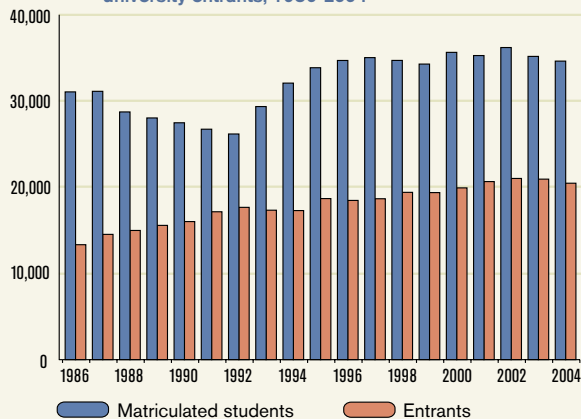
Finnish universities received close on 114,200 applications in 2004. Of the applicants, 70,200 took entrance examinations and almost 29,300 were accepted. 57.6% of the successful applicants were women. A total of around 20,500 new students began their studies in autumn 2004. An average of 32.2% (2003) of the new students had passed their matriculation examination the same year. The variation in the acceptance rate for each field of study was high, the best result was achieved in technology and science. Of the 23,300 students who accepted the offer of a university place, 27% were 19 years old or younger.

Chart 1 Student selection in 2004 by field of study (percentage of applications accepted)



Source: KOTA

Chart 2 Matriculated students and university entrants, 1986-2004



Source: KOTA, Statistics Finland and the Matriculation Examination Board

Reform of degree programme advanced

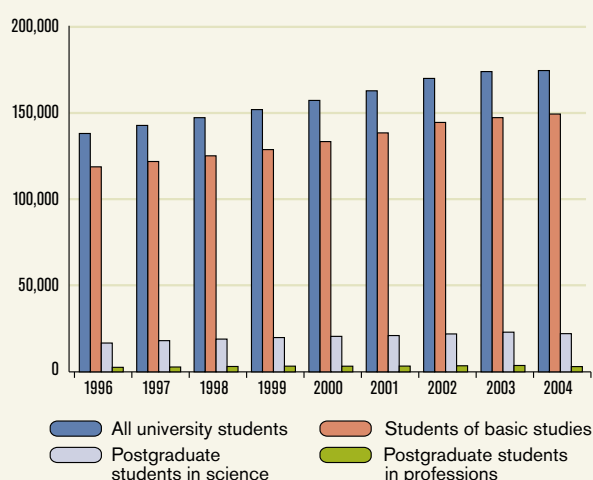
The renewal of the degree structure and efforts to improve teaching and learning were continued to ensure the quality of education and degrees, a higher study completion rate, shorter study times and better international competitiveness. The Government proposal for legislative amendments was approved in July 2004. With the exception of medicine and dentistry, all other fields of study will change over to the new two-stage degree system as of August 1, 2005. Subject-specific coordination groups carried out preparatory work on the introduction of the new degree structure into universities.

Implementation of the action programme to shorten study times at universities also continued. During the year under review, preparatory work was carried out on the Government proposal to amend the Universities Act vis-à-vis study rights. Shorter study times were also an objective in the reform of the degree structure. Study durations and contents were revised and personal study plans introduced. Development projects under way at universities included a project to cut study times to five years (w5w). For the period 2004-2006, a total of EUR 5 million per annum will be allocated to development projects concerning academic counselling both as regards university teaching and studies. Universities were also allocated performance-based funding on the basis of progress made in studies.

Virtual University teaching strengthened

The Finnish Virtual University (FVU) continued to develop Internet education and services in line with the 2000-2004 strategy for education, training and research in the information society. The universities and their joint networks continued to expand Internet education and offered students hundreds of Internet courses, allowing participants to obtain tens of thousands of credits. University personnel were provided with support in areas such as pedagogics and technical matters, while teaching staff were offered continuing education. In 2004, the Ministry

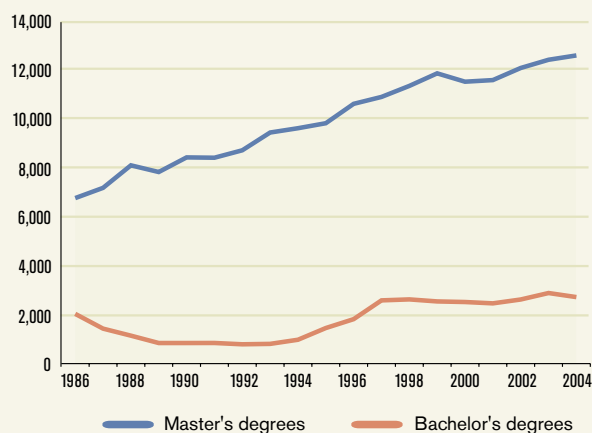
Chart 3 Number of students, 1996-2004*



*Data includes students both present and absent. The number of students in 1996-2003, calculated on December 31. As of 2004, the number of students, calculated on September 20.

Source: KOTA

Chart 4 Bachelor's and Master's degrees, 1986-2004



Source: KOTA

of Education supported the implementation of the Virtual University and the promotion of the information society at universities to the tune of a total of EUR 9 million.

The Finnish Virtual University Development Unit provided support for individual universities and their joint virtual university projects by developing tools, disseminating information and through training and education. The FVU services are accessible to all universities through a portal, which was completed at the end of 2004. The preparatory work on the FVU strategy for 2005-2010 was begun.

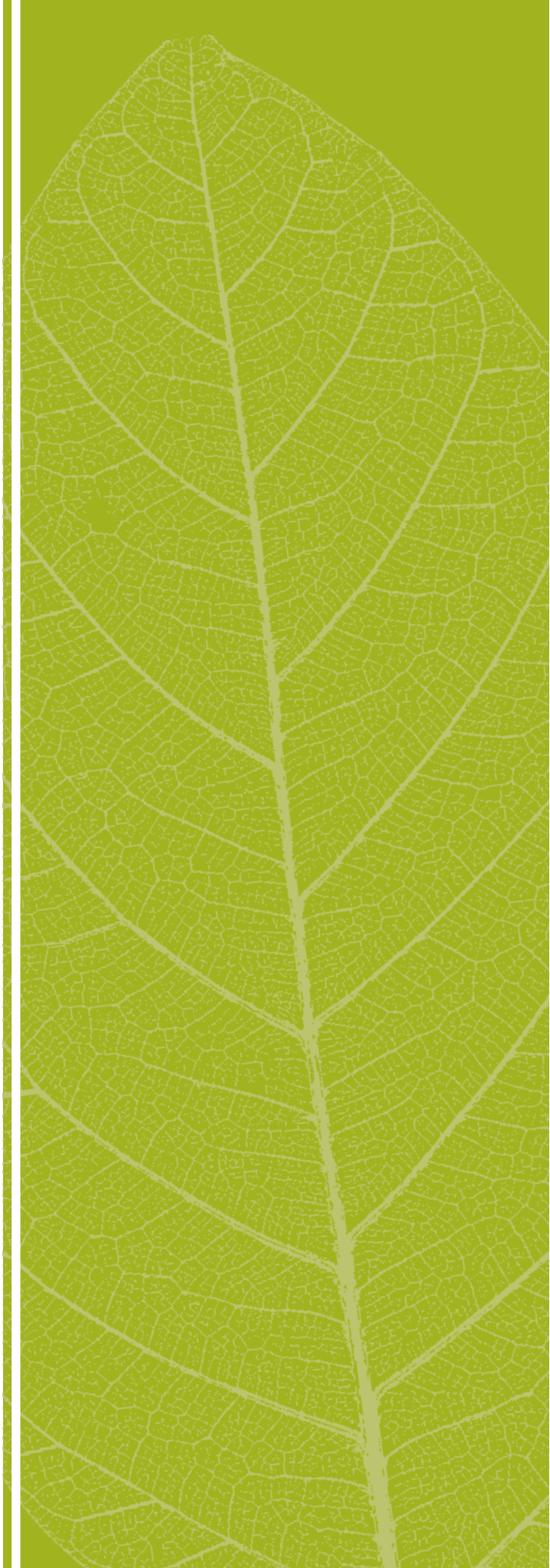
As part of the process of implementing the information society strategy, and in order to meet the demand for labour in the information industry and digital communications, implementation of the Information Industry Programme continued.

The national agreement on flexible study rights (JOO) took effect in 2004.

Number of degrees completed increased

The number of university students remained at the level of the previous year. The total figure was 174,300, of whom 149,200 were undergraduates and 22,100 postgraduates. Some 53.4% of all university students were women.

A total of 17,900 degrees were awarded during the year, i.e. an increase of less than 1% on the previous year. Of this number, nearly 12,600 were Master's degrees. Compared with the previous year, the number of Master's degrees grew almost 1%. Despite the favourable trend, the annual target for 2004-2006 was not reached. The mean completion time was 6.0 years. More than 2,700 students completed a Bachelor's degree, 6% less than in 2003.



Postgraduate education

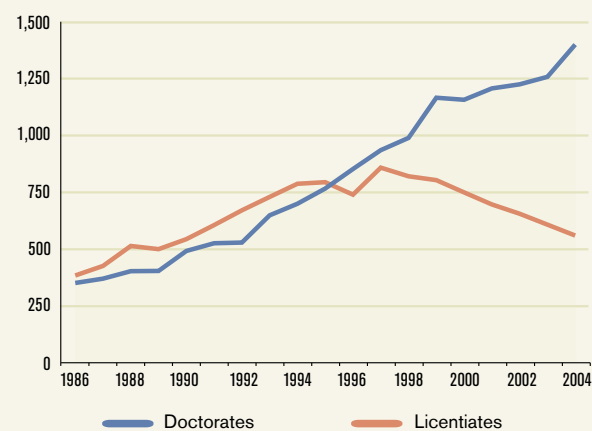
Postgraduate education developed

When the graduate school system was launched in 1995, the main aims were to improve the quality of researcher training, make postgraduate education more systematic, shorten the time spent on preparing doctoral dissertations, lower the average age of new doctors, improve cooperation between research groups, and increase international cooperation in education and research. Evaluations of the system have concluded that the system has made postgraduate education more systematic and effective and increased research cooperation and the number of international educational events. The age of new doctors has also gone down. Of the doctors who have completed graduate school and moved into working life, approximately 30% had completed their doctorate before the age of 30.

In 2004, there were altogether 114 graduate schools at Finnish universities funded by the Ministry of Education, with 4,000 full-time research students. Some 1,426 of the study places were funded by the Ministry of Education. There were 45 graduate schools in natural sciences and technology (43.3% of all study places), 13 in biological and environmental sciences (15.2%), 40 in cultural studies and social sciences (24.3%), and 16 in health sciences (17.2%). Most of the graduate schools are network-type co-projects between several universities, 15 acting as project coordinators. All universities are included in the graduate school network. One of the most important benefits of the system has been the intensification of cooperation between universities.

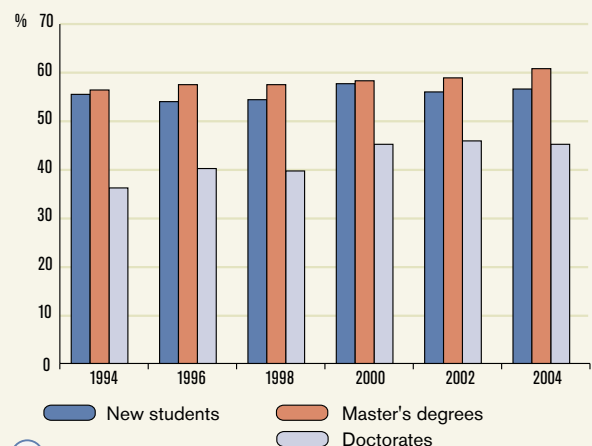
The year under review was the beginning of the seventh national application procedure for graduate schools. The Ministry of Education invited applications for 420 graduate school places and four research coordinator posts, which will become vacant at the end of 2005. Internationalization, improved

Chart 5 Licentiates and doctorates, 1986-2004



Source: KOTA

Chart 6 Percentage of women among new students, Master's degrees and doctorates, 1994-2004



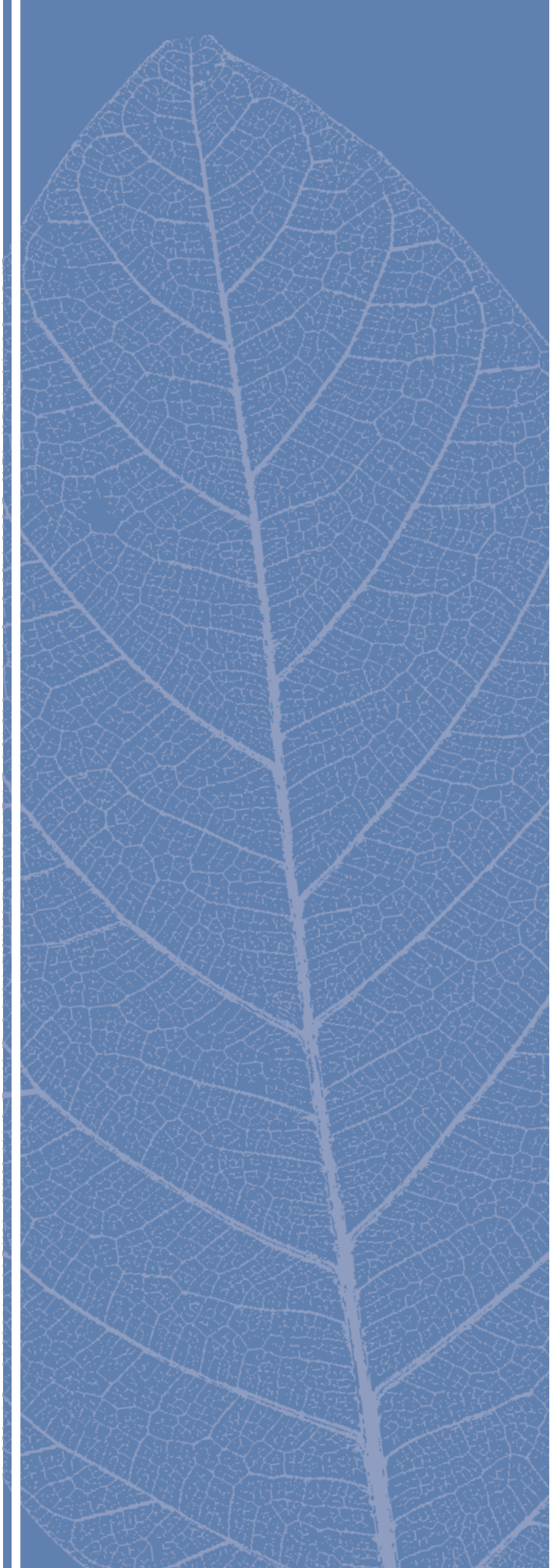
Source: KOTA

researcher mobility and contacts with working life, in addition to quality, will be the main selection criteria. The Ministry of Education will make its decisions in summer 2005 on the basis of the scientific evaluation made by the Academy of Finland.

The Ministry of Education set up a working group on research careers in October 2004. The objective included drawing up a proposal for a strategy to promote professional research careers and improve their appeal, to advance women's careers and equality in research and to find ways of taking into account internationalization in the various stages of a research career. The term of the working groups ends on December 31, 2005.

Number of doctorates increased

The number of doctorates continued to grow. In 2004, the increase was 11% higher than the year before. A total of 1,399 doctorates were completed during the year under review, compared with 1,257 in 2003. Licentiates numbered 558 in 2004 (2003: 606).



Research

Research funding developed favourably

The favourable trend in research funding continued. In 2004, 3.4% of GDP was allocated for research and product development. Public research accounted for 30% of all R&D funding.

The percentage of public sector funding for research is of a high order in Finland by international standards, i.e. 1% of GDP as opposed to the EU country average of 0.75% (OECD). The number of research personnel in relation to the labour force in Finland was among the highest in the OECD countries, i.e. over 2% of the labour force.

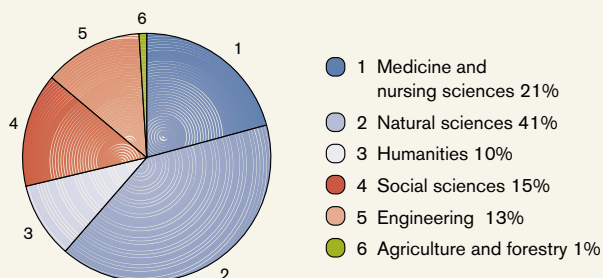
In 2004, the Ministry of Education spent EUR 648 million on research and development, i.e. 42% of all government research expenditure. Most of the Ministry of Education's research funding went to universities and the Academy of Finland, their combined total of all public research funding being 40%. Research expenditure accounted for just under 11% of all spending by the administrative sector of the Ministry of Education.

The 2004 State budget authorized the Academy of Finland to grant EUR 172.6 million of research funding, i.e. EUR 20 million more than in 2003. During the year under review, the Academy of Finland allocated approximately EUR 20 million for infrastructure projects at universities.

In 2004, altogether 42 centres of excellence were funded under the centres of excellence programme in research. The total funding for the programme covering the period 2002-2007 is EUR 33 million.

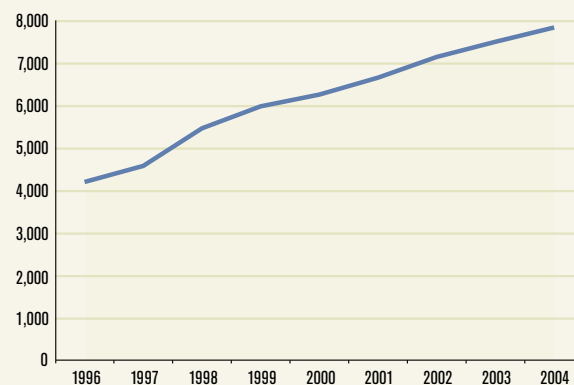
Funding for biotechnology continued. On the basis of the evaluation working group's decision

Chart 7 Academy of Finland decisions on research funding by research field 2004



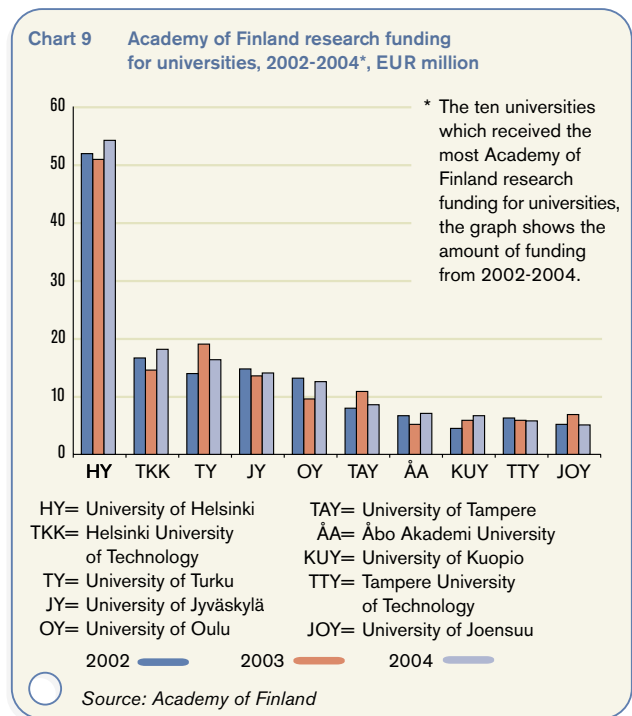
Source: Academy of Finland

Chart 8 Research personnel * 1996-2004



* Also includes graduate school research students

Source: KOTA



completed in 2002 it was decided to extend funding for biotechnology research to cover the period 2004-2006. The funding decision was made within the universities' performance agreements.

The Ministry of Education provided central funding for joint scientific computing services and FUNET data network services for all institutions of higher education. The Centre for Scientific Computing (CSC) was responsible for practical implementation.

The Ministry of Education promoted research in science and technology by allocating funds for two consortia linked with universities and engaging in science and technology research.

FinELib, the National Electronic Library, acquired Finnish and international resources to support teaching and learning. The FinELib services cover approximately 19,500 online journals, 230 reference databases and 25,000 e-books. Nelli, the

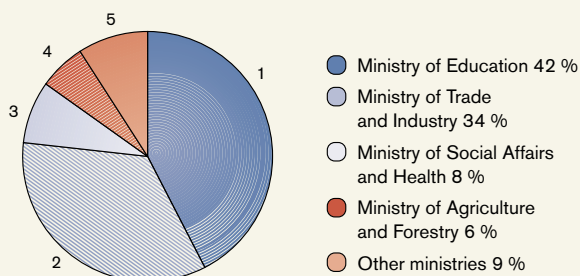
National Electronic Library Interface, was also opened during the year under review.

Research system evaluated

The Science and Technology Policy Council launched an evaluation on the structures of the Finnish research system in 2004. The aim of the evaluation was to further develop the entire research system as a functional whole, strengthen the internationalization process of research and continue quality development. The Science and Technology Policy Council approved the final report of the evaluation on February 4, 2005.

The Academy of Finland completed the following evaluation reports in 2004: Research Programme on Business Expertise, Research Programme for Telecommunication Electronics (Teletronics II), Research Programme on Marginalisation, Inequality and Ethnic Relations in Finland (SYREENI), Research Pro-

Chart 10 R&D funding by administrative sector in 2004
Total EUR 1,583 million



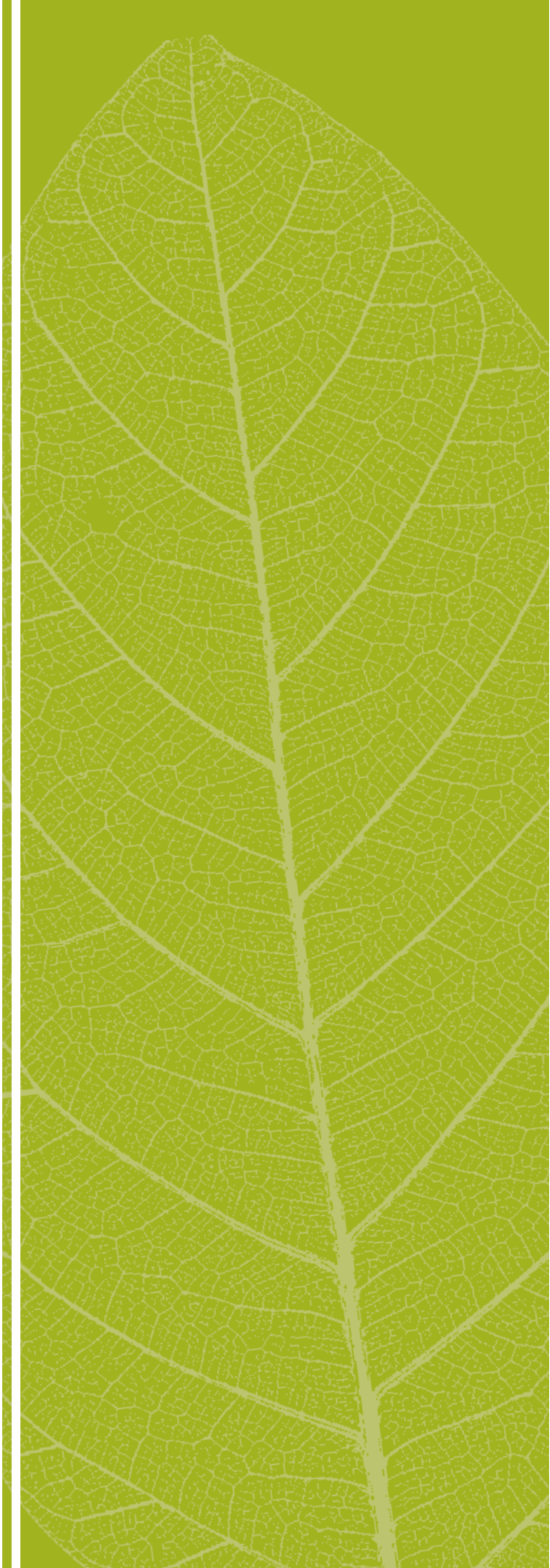
Source: Statistics Finland

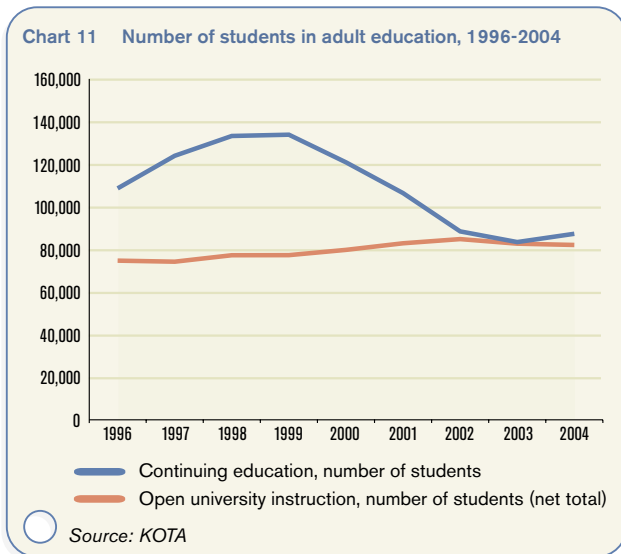
gramme on Biological Functions and Research Programme for Space Research.

According to the Finnish Science Barometer 2004, 62% of Finns are interested in science and follow it in the media, young people also find research appealing as a career.

International cooperation intensified

International cooperation in science policy was intensified and implementation of science policy aims were advanced by promoting the development of the European Research Area and preparation of the seventh EU Framework Programme for Research and Technological Development (2007-). Finland joined the leading international organization in astronomical research, the European Southern Observatory (ESO) in July, 2004.





Open university and continuing education

The Ministry of Education set up a working group to study the provision of adult education at universities in August, 2004. The term of the working group ends on May 31, 2005.

Universities played a major role in organizing open-university instruction, and courses were offered in almost all fields of study. In 2004, over 82,300 people studied with the open university, approximately 1% down on the previous year. A total of 678 students were accepted for degree programmes at universities on the basis of studies taken through the open university, i.e. approx. 55% of the target set for the open university. The University for the Third Age for older people had almost 14,500 registered students, an increase of almost 7% on the previous year. Universities improved mature students' potential for completing a university degree by increasing educational provision in Master's degree programmes.

Over 3,500 continuing education courses were held in 2004. Approximately 280 of these were specialization programmes, each with more than 20 credits. The number of students attending continuing education courses increased by almost 5% more than the year before, i.e. up from 83,700 to almost 87,600.

Steering and structural development

Legislation amended

The act amending the Universities Act (715/2004) gave further provisions on the obligations and administration of universities and provided for the changeover to the two-stage degree structure.

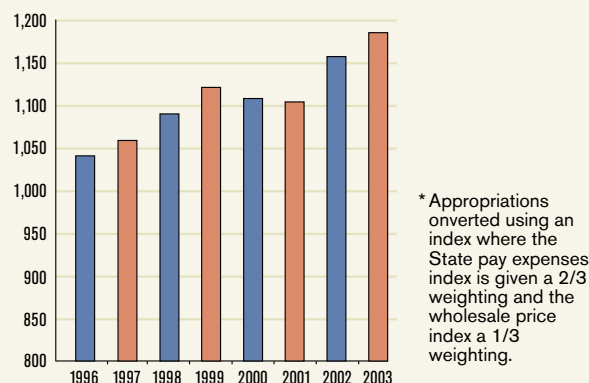
The act amending section 3 of the Higher Education Development Act (793/2004) provided for the adjustment of the operating expense appropriations in the State budget for the period 2005-2007.

Prerequisites for research and teaching strengthened

Under the Higher Education Development Act the university operating expense appropriations for 2004 increased by EUR 20 million excluding pay rises. Basic funding increased at all universities compared with 2003. The act amending section 3 of the Higher Education Development Act was issued in August 2004. The appropriations for the financial year 2005 and subsequent years will be adjusted upwards by at least the amount that wage costs have risen during each financial year due to the pay settlements for pay agreements at the central State level. In addition, appropriations in 2005-2007 will be raised by at least EUR 20 million per year.

The Ministry of Education and the Ministry of Finance prepared joint amendments to the current practices concerning share subscriptions. The amendment will ease the founding of limited liabili-

Chart 12 Operating expenses of universities (EUR million) (given in annual accounts) 1996-2003, appropriations in real terms*



ty companies or the subscription of shares in existing companies, their assignment and the use of shareholder's rights by the State in such companies.

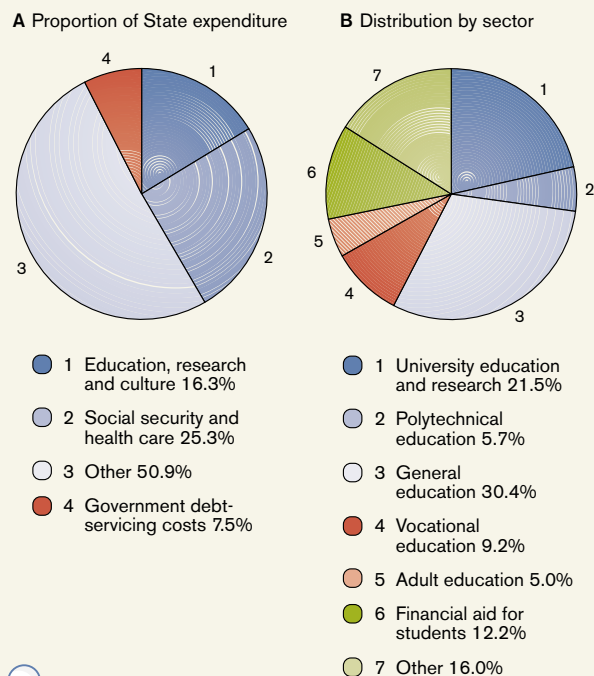
As regards the expenses incurred from university facilities, the Ministry of Finance set up a cost-monitoring steering group whose responsibilities include the steering and harmonization of the preparatory work on university and Senate Properties leases and the monitoring of cost trends associated with real estate.

University real estate strategies and management have been developed in a way that encourages efficient use of the facilities and cuts costs. Individual universities were requested to compile their own real estate strategies.

In April, the Ministry of Education and the universities negotiated over the resources for 2005 and the targets for 2004-2006, taking into account the development plan for education and research and the changes that had occurred in the budget regulations. The Ministry of Education submitted a written report to the universities concerning their operations in 2003. As part of the development of its results management system, the Ministry of Education continued the development project to improve its KOTA database.

The 2004 State budget allocated a total of EUR 1.19 billion for university operating expenses. The level of basic funding remained unchanged and

Chart 13 Educational, research and cultural appropriations in the State Budget and supplementary budgets and their distribution by sector in 2004 (%)



special funding was granted for national development programmes, such as information society projects, the development of study processes and study environments and the improvement of the prerequisites for research. Actual operating expenses increased by EUR 73.6 million in 2004. Altogether, EUR 29 million in university operating expenses was allocated on the basis of performance evaluation. Of this amount, EUR 21.7 million was granted on the basis of centres of excellence and quality in research, education, adult education and artistic fields. Study progress, internationalization and graduate employment were also used as performance criteria, and a total of EUR 3,4 million was granted on that basis. Under national programmes and projects a total of EUR 55,9 million was provided for national areas of emphasis, such as education, training and research strategies in the information society (EUR 20,2 million), virtual university projects (EUR 9,1 million), teacher training (EUR 8,1 million), development of study processes (EUR 3,7 million) and entrepreneurial skills (EUR 1,6 million). A total of EUR 5,3 million was allocated to the national health project.

Universities also developed their workplace communities by making preparations for the introduction of the new pay system in 2005.

Supplementary funding remains the same

Supplementary funding for universities fell by 0.9% compared with the previous year and accounted for 35.8% of total university funding. Strategic planning and focusing objectives have helped to make commercial services and jointly funded activities more effective. Procedures and guidelines relating to external activities were revised, and steps were also taken to improve cost accounting.

Operating conditions improve with new premises

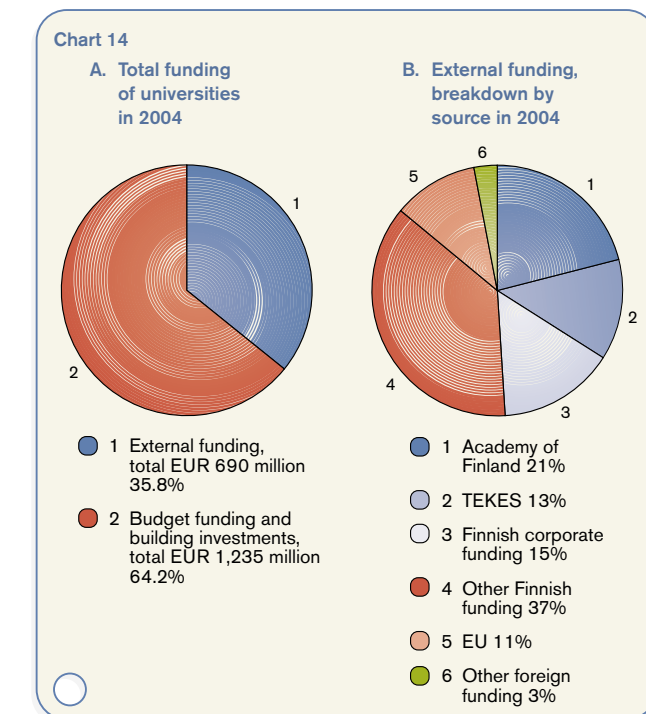
The construction of new university premises continued. During the year under review, the most important to be opened for use included: the Exactum building in Kumpula for the University of Helsinki and the veterinary medicine and food science building for the University of Helsinki in Viikki, the 7th building phase for Lappeenranta University of Technology, the NanoScience building at the University of Jyväskylä and the Medistudia at the University of Kuopio. Completed renovation projects included the Didacticum building for the University of Turku and extension E of the main building at the University of Tampere.

In spring 2004, the Ministry of Education launched an investigation prior to the compilation of universities' real estate strategies. The working group prepared the relevant material on which the strategies of individual universities should be based. The strategies will help the integration of real estate management into the universities' general and financial administration.

Education provision diversified

During the year under review, education provision at the universities remained almost unchanged. Targets were redefined mainly in teacher training and medicine. The work by individual universities to develop their internal structures continued.

The advanced age of many teachers and the relatively large number of teaching staff without formal qualifications, which prompted the launch in 2001 of a supplementary teacher training programme, continued. The programme will increase places in teacher training by around 2,500 over the period 2004-2006. The programme is available at ten universities. The largest groups benefiting from the programme are teachers of mathematics and science,



language teachers, special education teachers and class teachers. Also teacher training in art subjects and physical education, academic counselling and teachers' chances of taking part in pedagogic studies have been increased. The extension programme covers both Finnish and Swedish-language teacher training.

The number of study places for physicians at Finnish universities increased from 550 to 600 in 2002 and the conversion programme begun at the University of Turku continued. A decision was also taken to increase the number of study places for dentists. In addition, the demand for additional training by other social and healthcare professionals was assessed.

Entrepreneurial skills as part of an effective system of innovation and the development of services and businesses in general were consolidated in line with the programme.

A working group was set up to survey training in cinematography and cooperation between art universities.

International and European cooperation

International cooperation reinforced

The Lisbon Strategy, which fosters EU competitiveness, calls for a stronger role for universities in promoting the quality and potential of education and ensuring closer interaction between education, science and business life. The position of European universities should also be reinforced in international competition and their appeal increased. As a concrete manifestation, the Commission issued a proposal in 2004 on how to advance cooperation in quality assurance at European institutions of higher education.

Mobility and cooperation in higher education will also be increased through a new lifelong learning programme which aims to replace all present EU education programmes (with the exception of Erasmus Mundus) as of the beginning of 2007.

International and European networking was advanced by increasing the supply of English-language education provision, promoting international student exchange, recruitment of international graduate students and reinforcement of Finnish expertise on Russia and cooperation with Russia. As part of the reform of the degree structure, the range of non-Finnish language degree programmes was expanded. International operations by the universities were

supported by improving mobility and the potential of universities to make full use of EU education programmes.

Quantitative targets concerning universities' student exchanges and international degree students were raised substantially for the period 2004-2006. The Ministry of Education allocated project funding for launching the planning of non-Finnish language Master's degree programmes and provided funding for universities on the basis of internationalization. When preparing the reform of the degree structure, attention was paid to improving the comparability of Finnish and European degrees. The Ministry compiled a recommendation for the institutions of higher education for the development of joint international degree programmes. Cooperation with Russia and Finnish expertise on Russia were strengthened in accordance with an action programme for the period 2003-2007. Finnish and Russian universities launched a Cross-Border University project as part of the same project.

The universities took an active part in the EU Sixth Framework Programme for Research and Technological Development (2002-2006) application rounds. At the end of 2004, Finns were involved in over 500 Sixth Framework projects. 31% of all Finnish participants came from universities, 29% from

research institutes, and 30% from companies. VTT Technology Studies published a report on Finnish participation in the Fifth Framework Programme for Research and Technological Development in spring 2004. According to the report, the satisfaction of Finnish participants in the Framework Programme has increased. Discussions on the EU's Seventh Framework Programme for Research and Technological Development began in 2004.

Finland took part in the OECD teacher project, the results of which were published in November.

Increase in foreign undergraduate students

The number of foreign undergraduate students grew 5.8% on the previous year and totalled almost 1,500. Finnish students abroad completed 509 degrees abroad in 2004 (2003: 566).

There was an increase in international student exchange, mainly through multilateral programmes. However, the targets set for the year were not achieved. During the year, 4,279 Finnish university students took part in exchange programmes abroad, compared with 3,863 in 2003. The number of foreign university students coming to Finland to study rose by 5.4%, from 3,987 to 4,341.

Chart 15 Student exchanges in 2004

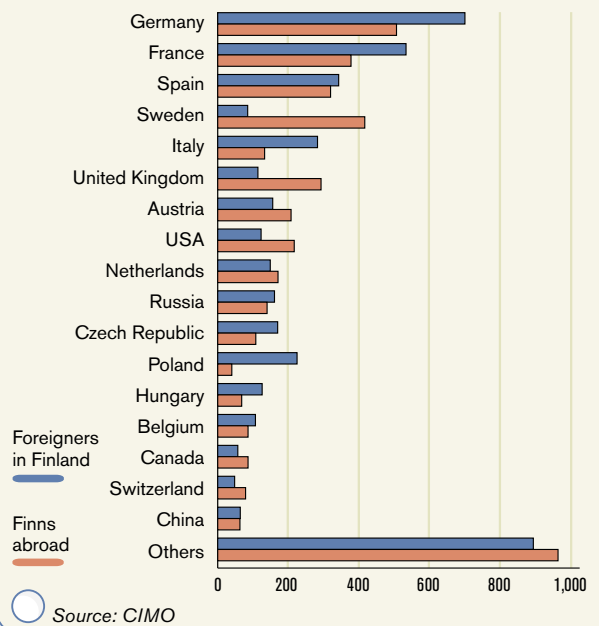
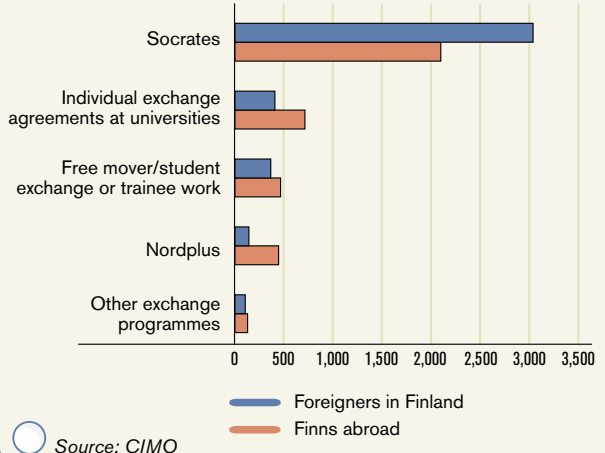


Chart 16 Students entering and leaving Finland under exchange programmes 2004



Social and regional impact of the universities

Work to strengthen the regional impact of higher education institutions continued by further improvements in the quality of teaching and research and by closer cooperation and networking with other parties in the regions. Universities' involvement in society was taken into account in their basic funding. Joint regional strategies among higher education institutions strengthened cooperation and networking among them. The Ministry of Education requested higher education institutions to bring their regional strategies up to date by autumn 2005. In addition, the Ministry will carry out a national programme for the regional development of Finnish universities and the promotion of their social impact during the period 2004-2006. The Ministry of Education helped to prepare the entry into force of the new Regional Development Act and completed several evaluations of the regional impact of the universities on commission from the Finnish Higher Education Evaluation Council (FINHEEC).

The Ministry of Education continued the development of six university centres aimed at reinforcing the effects of universities in their regions. University centres were allocated EUR 3 million for the development of learning and research environments.

The investigation of educational programmes leading to a university degree and funded by the Structural Fund were evaluated for their profiles and regional impact. On the basis of the evaluation the Ministry of Education is preparing a report on what programmes should be continued after 2006.

EU Structural Fund projects funded through the regional government offices known in Finland as

Provincial State Offices dealt with extensive training programmes, development of the information society and teaching technology, and cooperation with industry by utilizing research findings, anticipating changes in working life and training corporate personnel. The programmes have improved the regional effectiveness of the universities, while the projects have advanced networking between educational institutions and industry, and other key strategic operative areas defined by the Ministry of Education.

Employment

The employment situation for university graduates declined slightly. According to data compiled by Statistics Finland, the unemployment rate among holders of a Master's degree aged 20-64 was 4.3%, compared with 3.7% in 2003. The unemployment rate among research graduates or holders of equivalent degrees in the same age category was 2.8% (2003: 2.4%). The employment situation for and placement in continuing education of holders of a Master's degree or doctorate remained at almost the same level as the year before. Approximately 92% of graduates and postgraduates who had completed their degrees in the past three years were employed or had a place in continuing education.

The universities stepped up their graduate placement work by improving the provision of advisory and guidance services and making better use of student traineeships.

Statistics

- Universities 2004
- Student selection 2004
- Continuing education at universities and in open university instruction 1996–2004
- Fields of study 2004
- State funding for research and development funding by receiving organization 1997–2004
- Academy of Finland funding decisions by university 2004
- University personnel working abroad and visits by foreign teachers and researchers to universities in Finland 1996–2004
- Teaching staff 1996-2004
- Proportion of women (%) among teaching staff 1996-2004
- Other personnel 1996-2004
- Status of holders of Master's degrees following graduation
- Unemployment rate (%) among holders of Master's degrees or postgraduate degrees 1991-2003



Universities 2004*

| | New students | | Students of basic studies | | Post-graduate students | | All students | | Master's degrees | | Doctor's degrees | |
|---|---------------|------------|---------------------------|------------|------------------------|------------|----------------|------------|------------------|------------|------------------|------------|
| | | % | | % | | % | | % | | % | | % |
| University of Helsinki | 4,357 | 21.3 | 31,444 | 21.1 | 5,488 | 24.8 | 37,852 | 21.7 | 2,330 | 18.5 | 395 | 28.2 |
| University of Joensuu | 1,187 | 5.8 | 6,838 | 4.6 | 763 | 3.5 | 7,601 | 4.4 | 617 | 4.9 | 57 | 4.1 |
| University of Jyväskylä | 1,855 | 9.1 | 12,411 | 8.3 | 1,616 | 7.3 | 14,304 | 8.2 | 1,367 | 10.9 | 113 | 8.1 |
| University of Kuopio | 824 | 4.0 | 5,049 | 3.4 | 647 | 2.9 | 5,930 | 3.4 | 427 | 3.4 | 76 | 5.4 |
| University of Lapland | 638 | 3.1 | 3,990 | 2.7 | 378 | 1.7 | 4,368 | 2.5 | 367 | 2.9 | 19 | 1.4 |
| University of Oulu | 2,083 | 10.2 | 13,646 | 9.1 | 1,783 | 8.1 | 15,818 | 9.1 | 1,247 | 9.9 | 130 | 9.3 |
| University of Tampere | 1,475 | 7.2 | 12,601 | 8.4 | 1,779 | 8.0 | 15,056 | 8.6 | 1,045 | 8.3 | 105 | 7.5 |
| University of Turku | 1,713 | 8.4 | 13,030 | 8.7 | 2,038 | 9.2 | 15,624 | 9.0 | 1,084 | 8.6 | 144 | 10.3 |
| University of Vaasa | 603 | 2.9 | 4,727 | 3.2 | 422 | 1.9 | 5,149 | 3.0 | 316 | 2.5 | 10 | 0.7 |
| Åbo Akademi University | 795 | 3.9 | 5,975 | 4.0 | 844 | 3.8 | 6,819 | 3.9 | 489 | 3.9 | 66 | 4.7 |
| Helsinki University of Technology | 1,407 | 6.9 | 12,430 | 8.3 | 2,762 | 12.5 | 15,192 | 8.7 | 961 | 7.6 | 130 | 9.3 |
| Lappeenranta University of Technology | 833 | 4.1 | 4,952 | 3.3 | 556 | 2.5 | 5,508 | 3.2 | 470 | 3.7 | 29 | 2.1 |
| Tampere University of Technology | 1,152 | 5.6 | 10,358 | 6.9 | 1,838 | 8.3 | 12,196 | 7.0 | 701 | 5.6 | 61 | 4.4 |
| Helsinki School of Economics | 473 | 2.3 | 3,844 | 2.6 | 393 | 1.8 | 4,237 | 2.4 | 351 | 2.8 | 18 | 1.3 |
| Swedish School of Economics and Business Administration | 359 | 1.8 | 2,246 | 1.5 | 179 | 0.8 | 2,425 | 1.4 | 226 | 1.8 | 18 | 1.3 |
| Turku School of Economics and Business Administration | 326 | 1.6 | 2,028 | 1.4 | 252 | 1.1 | 2,280 | 1.3 | 211 | 1.7 | 15 | 1.1 |
| Academy of Fine Arts | 28 | 0.1 | 213 | 0.1 | 14 | 0.1 | 227 | 0.1 | 19 | 0.2 | 0 | 0 |
| Sibelius Academy | 171 | 0.8 | 1,381 | 0.9 | 133 | 0.6 | 1,514 | 0.9 | 125 | 1.0 | 5 | 0.4 |
| Theatre Academy | 41 | 0.2 | 385 | 0.3 | 35 | 0.2 | 420 | 0.2 | 43 | 0.3 | 0 | 0 |
| University of Art and Design Helsinki | 141 | 0.7 | 1,619 | 1.1 | 185 | 0.8 | 1,804 | 1.0 | 192 | 1.5 | 8 | 0.6 |
| Total | 20,461 | 100 | 149,167 | 100 | 22,105 | 100 | 174,324 | 100 | 12,588 | 100 | 1,399 | 100 |

* Data includes students both present and absent

Student selection 2004

| | Applications | Examinees | Admitted | Entrants |
|--------------------------|----------------|---------------|---------------|---------------|
| Theology | 1,133 | 911 | 379 | 351 |
| Humanities | 16,711 | 11,757 | 4,035 | 2,901 |
| Art and design | 3,597 | 3,316 | 489 | 251 |
| Music | 947 | 805 | 215 | 171 |
| Theatre and dance | 2,238 | 2,109 | 72 | 54 |
| Educational sciences | 18,467 | 6,385 | 2,674 | 2,011 |
| Sport sciences | 1,004 | 340 | 140 | 87 |
| Social sciences | 13,906 | 8,936 | 2,975 | 2,204 |
| Psychology | 2,659 | 1,715 | 215 | 190 |
| Health sciences | 1,449 | 839 | 449 | 352 |
| Law | 2,970 | 2,336 | 539 | 494 |
| Economics | 11,762 | 7,228 | 3,252 | 2,291 |
| Natural sciences | 17,278 | 10,301 | 6,832 | 3,571 |
| Agriculture and forestry | 1,891 | 1,338 | 647 | 432 |
| Engineering | 10,850 | 6,337 | 5,059 | 3,888 |
| Medicine | 3,505 | 3,001 | 624 | 592 |
| Dentistry | 488 | 413 | 113 | 112 |
| Veterinary medicine | 535 | 409 | 54 | 54 |
| Pharmacy | 2,093 | 1,653 | 450 | 427 |
| Fine arts | 671 | 71 | 43 | 28 |
| Total | 114,154 | 70,200 | 29,256 | 20,461 |

Source: KOTA

| Teaching staff | | Research staff | | Students at graduate schools | | Other staff | | Expenditure EUR 1,000 (Budget funding) | | |
|----------------|------------|----------------|------------|------------------------------|------------|---------------|------------|--|------------|---|
| % | | % | | % | | % | | % | | |
| 1,629 | 20.5 | 1,404 | 22.3 | 395 | 25.1 | 3,642 | 25.8 | 303,130 | 24.5 | University of Helsinki |
| 415 | 5.2 | 181 | 2.9 | 56 | 3.6 | 587 | 4.2 | 54,945 | 4.4 | University of Joensuu |
| 721 | 9.1 | 401 | 6.4 | 157 | 10 | 989 | 7.0 | 90,453 | 7.3 | University of Jyväskylä |
| 348 | 4.4 | 322 | 5.1 | 88 | 5.6 | 773 | 5.5 | 51,313 | 4.2 | University of Kuopio |
| 195 | 2.5 | 63 | 1.0 | 12 | 0.8 | 325 | 2.3 | 30,528 | 2.5 | University of Lapland |
| 812 | 10.2 | 520 | 8.3 | 142 | 9.0 | 1,440 | 10.2 | 122,590 | 9.9 | University of Oulu |
| 605 | 7.6 | 364 | 5.8 | 95 | 6.0 | 995 | 7.1 | 83,056 | 6.7 | University of Tampere |
| 805 | 10.1 | 508 | 8.1 | 175 | 11.1 | 1,216 | 8.6 | 103,590 | 8.4 | University of Turku |
| 170 | 2.1 | 37 | 0.6 | 8 | 0.5 | 207 | 1.5 | 20,719 | 1.7 | University of Vaasa |
| 364 | 4.6 | 222 | 3.5 | 87 | 5.5 | 516 | 3.7 | 48,138 | 3.9 | Åbo Akademi University |
| 474 | 6.0 | 1,100 | 17.5 | 175 | 11.1 | 1,413 | 10.0 | 114,636 | 9.3 | Helsinki University of Technology |
| 217 | 2.7 | 285 | 4.5 | 16 | 1.0 | 286 | 2.0 | 32,489 | 2.6 | Lappeenranta University of Technology |
| 337 | 4.2 | 650 | 10.3 | 123 | 7.8 | 750 | 5.3 | 66,016 | 5.3 | Tampere University of Technology |
| 154 | 1.9 | 85 | 1.4 | 17 | 1.1 | 219 | 1.6 | 23,629 | 1.9 | Helsinki School of Economics |
| 97 | 1.2 | 13 | 0.2 | 11 | 0.7 | 100 | 0.7 | 11,423 | 0.9 | Swedish School of Economics and Business Administration |
| 115 | 1.4 | 66 | 1.0 | 7 | 0.4 | 131 | 0.9 | 14,638 | 1.2 | Turku School of Economics and Business Administration |
| 31 | 0.4 | 28 | 0.4 | 0 | 0 | 28 | 0.2 | 4,716 | 0.4 | Academy of Fine Arts |
| 242 | 3.0 | 8 | 0.1 | 3 | 0.2 | 143 | 1.0 | 22,177 | 1.8 | Sibelius Academy |
| 60 | 0.8 | 1 | 0 | 1 | 0.1 | 89 | 0.6 | 10,274 | 0.8 | Theatre Academy |
| 148 | 1.9 | 32 | 0.5 | 3 | 0.2 | 244 | 1.7 | 26,434 | 2.1 | University of Art and Design Helsinki |
| 7,939 | 100 | 6,290 | 100 | 1,571 | 100 | 14,093 | 100 | 1,234,894 | 100 | Total |

Source: KOTA

Continuing education at universities and in open university instruction 1996-2004

| | 1996 | 1998 | 2000 | 2002 | 2004 |
|---|---------|---------|---------|--------|--------|
| Continuing education, number of courses | 4,267 | 5,209 | 5,198 | 4,079 | 3,515 |
| - short courses (5 days or less) | 1,977 | 2,597 | 2,690 | 1,870 | 1,554 |
| - special studies* | | 1,519 | 566 | 328 | 280 |
| - other courses | 2,290 | 1,093 | 1,942 | 1,881 | 1,681 |
| Students | 108,951 | 133,622 | 121,221 | 88,709 | 87,579 |
| Course days (1 day = 6 classroom hours) | 59,318 | 66,791 | 55,484 | 42,151 | 37,370 |
| Open university instruction, Students | 74,934 | 77,477 | 80,002 | 85,075 | 82,318 |

*From 1998 onwards

Source: KOTA

Fields of study 2004

| | New* students | | All* students | | Bachelor's degrees | | Master's degrees | | Licentiate | |
|--------------------------|------------------|------------|------------------|------------|-----------------------|------------|---------------------|------------|------------|------------|
| | | % | | % | | % | | % | | % |
| Theology | 351 | 1.7 | 2,833 | 1.6 | 23 | 0.8 | 185 | 1.5 | 7 | 1.3 |
| Humanities | 2,901 | 14.2 | 27,089 | 15.5 | 760 | 28.0 | 1,793 | 14.2 | 79 | 14.2 |
| Art and design | 251 | 1.2 | 2,717 | 1.6 | 95 | 3.5 | 263 | 2.1 | 0 | 0 |
| Music | 171 | 0.8 | 1,514 | 0.9 | 17 | 0.6 | 125 | 1.0 | 1 | 0.2 |
| Theatre and dance | 54 | 0.3 | 454 | 0.3 | 7 | 0.3 | 55 | 0.4 | 0 | 0 |
| Educational sciences | 2,011 | 9.8 | 14,413 | 8.3 | 502 | 18.5 | 1,552 | 12.3 | 43 | 7.7 |
| Sport sciences | 87 | 0.4 | 797 | 0.5 | 3 | 0.1 | 109 | 0.9 | 4 | 0.7 |
| Social sciences | 2,204 | 10.8 | 18,266 | 10.5 | 261 | 9.6 | 1,218 | 9.7 | 65 | 11.6 |
| Psychology | 190 | 0.9 | 1,934 | 1.1 | 7 | 0.3 | 210 | 1.7 | 24 | 4.3 |
| Health sciences | 352 | 1.7 | 2,881 | 1.7 | 14 | 0.5 | 295 | 2.3 | 11 | 2.0 |
| Law | 494 | 2.4 | 4,624 | 2.7 | 25 | 0.9 | 443 | 3.5 | 27 | 4.8 |
| Economics | 2,291 | 11.2 | 18,065 | 10.4 | 274 | 10.1 | 1,665 | 13.2 | 50 | 9.0 |
| Natural sciences | 3,571 | 17.5 | 26,539 | 15.2 | 396 | 14.6 | 1,419 | 11.3 | 114 | 20.4 |
| Agriculture and forestry | 432 | 2.1 | 3,582 | 2.1 | 6 | 0.2 | 273 | 2.2 | 3 | 0.5 |
| Engineering | 3,888 | 19.0 | 37,969 | 21.8 | 0 | 0 | 2,353 | 18.7 | 126 | 22.6 |
| Medicine | 592 | 2.9 | 7,547 | 4.3 | 0 | 0 | 420 | 3.3 | 1 | 0.2 |
| Dentistry | 112 | 0.5 | 606 | 0.3 | 0 | 0 | 52 | 0.4 | 0 | 0 |
| Veterinary medicine | 54 | 0.3 | 503 | 0.3 | 0 | 0 | 50 | 0.4 | 0 | 0 |
| Pharmacy | 427 | 2.1 | 1,764 | 1.0 | 316 | 11.6 | 89 | 0.7 | 3 | 0.5 |
| Fine arts | 28 | 0.1 | 227 | 0.1 | 11 | 0.4 | 19 | 0.2 | 0 | 0 |
| Total | 20,461 | 100 | 174,324 | 100 | 2,717 | 100 | 12,588 | 100 | 558 | 100 |

* Includes students both present and absent.

** specialist degrees in medicine, dentistry or veterinary medicine

State funding for research and development funding by receiving organization, 1997-2004 at current prices, EUR million

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | % |
|-------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|
| Universities | 305.5 | 313.5 | 323.3 | 346.4 | 349.8 | 377.7 | 393.3 | 407.9 | 27 % |
| University hospitals | 60.5 | 60.5 | 60.5 | 59.4 | 56.7 | 56.7 | 48.7 | 48.7 | 3 % |
| Academy of Finland | 138.6 | 142.9 | 155.5 | 153.8 | 187.1 | 184.9 | 188.6 | 214.6 | 14 % |
| Technology Development Centre | 327.0 | 374.9 | 410.8 | 394.5 | 400.1 | 398.5 | 407.2 | 432.4 | 28 % |
| State owned- research institutes | 196.2 | 204.3 | 208.0 | 215.8 | 219.8 | 234.4 | 239.5 | 253.6 | 16 % |
| Other public funding | 156.1 | 153.5 | 117.0 | 129.7 | 137.7 | 140.0 | 168.3 | 181.1 | 12 % |
| Total | 1,183.9 | 1,249.6 | 1,275.1 | 1,299.6 | 1,351.2 | 1,392.2 | 1,445.7 | 1,538.3 | 100 % |

Source: Statistics Finland

| Doctorates | | Other** degrees | | |
|--------------|------------|--------------------|------------|--------------------------|
| | % | | % | |
| 22 | 1.6 | 0 | 0 | Theology |
| 119 | 8.5 | 0 | 0 | Humanities |
| 9 | 0.6 | 0 | 0 | Art and design |
| 5 | 0.4 | 0 | 0 | Music |
| 0 | 0 | 0 | 0 | Theatre and dance |
| 79 | 5.6 | 0 | 0 | Educational sciences |
| 3 | 0.2 | 0 | 0 | Sport sciences |
| 101 | 7.2 | 0 | 0 | Social sciences |
| 22 | 1.6 | 0 | 0 | Psychology |
| 45 | 3.2 | 0 | 0 | Health sciences |
| 23 | 1.6 | 0 | 0 | Law |
| 82 | 5.9 | 0 | 0 | Economics |
| 306 | 21.9 | 0 | 0 | Natural sciences |
| 38 | 2.7 | 0 | 0 | Agriculture and forestry |
| 256 | 18.3 | 0 | 0 | Engineering |
| 245 | 17.5 | 623 | 96.0 | Medicine |
| 15 | 1.1 | 22 | 3.4 | Dentistry |
| 11 | 0.8 | 4 | 0.6 | Veterinary medicine |
| 18 | 1.3 | 0 | 0 | Pharmacy |
| 0 | 0 | 0 | 0 | Fine arts |
| 1,399 | 100 | 649 | 100 | Total |

Source: KOTA

Academy of Finland funding decisions by university 2004*, EUR million

| University | EUR Million | % |
|--|--------------|------------|
| University of Helsinki | 54.4 | 34.8 |
| University of Joensuu | 5.1 | 3.3 |
| University of Jyväskylä | 14.1 | 9.0 |
| University of Kuopio | 6.7 | 4.3 |
| University of Lapland | 1.0 | 0.6 |
| University of Oulu | 12.6 | 8.1 |
| University of Tampere | 8.6 | 5.5 |
| University of Turku | 16.4 | 10.5 |
| University of Vaasa | 0.3 | 0.2 |
| Åbo Akademi University | 7.1 | 4.5 |
| Helsinki University of Technology | 18.2 | 11.6 |
| Lappeenranta University of Technology | 1.6 | 1.0 |
| Tampere University of Technology | 5.8 | 3.7 |
| Helsinki School of Economics | 2.0 | 1.3 |
| Swedish School of Economics and Business Administration | 0.04 | 0 |
| Turku School of Economics and Business Administration | 0.7 | 0.4 |
| Sibelius Academy | 0.7 | 0.4 |
| Theatre Academy of Finland | 0.2 | 0.1 |
| University of Art and Design Helsinki | 0.8 | 0.5 |
| Total | 156.3 | 100 |

*Including estimates of the costs
associated with research posts

Source: Academy of Finland

University personnel working abroad and visits by foreign teachers and researchers to universities in Finland, 1996-2004 (working over one month)

| | Researchers/ teachers abroad, number of persons | Length of stay (mean), months/person | Foreign researchers/ teachers, number of persons | Length of stay (mean), months/person |
|-------------|--|---|---|---|
| 1996 | 992 | 4.7 | 1,065 | 4.4 |
| 1997 | 939 | 4.1 | 1,201 | 4.2 |
| 1998 | 912 | 4.1 | 1,108 | 4.6 |
| 1999 | 825 | 4.3 | 1,177 | 4.6 |
| 2000 | 741 | 4.6 | 1,153 | 4.9 |
| 2001 | 735 | 4.2 | 1,030 | 5.2 |
| 2002 | 664 | 4.1 | 1,076 | 5.0 |
| 2003 | 578 | 4.3 | 1,088 | 4.9 |
| 2004 | 635 | 4.0 | 1,060 | 5.2 |

Source: KOTA

Teaching staff 1996-2004*

| | Total | Professors | Senior assistants | Assistants | Lecturers | Full-time untenured teachers | Calculated hours of teaching |
|------|-------|------------|-------------------|------------|-----------|------------------------------|------------------------------|
| 1996 | 7,737 | 2,070 | 657 | 1,750 | 1,953 | 348 | 958 |
| 1997 | 7,706 | 2,126 | 686 | 1,721 | 1,947 | 330 | 896 |
| 1998 | 7,290 | 2,011 | 649 | 1,530 | 1,891 | 312 | 897 |
| 1999 | 7,270 | 2,048 | 672 | 1,489 | 1,870 | 298 | 893 |
| 2000 | 7,387 | 2,106 | 689 | 1,473 | 1,913 | 277 | 929 |
| 2001 | 7,562 | 2,175 | 677 | 1,405 | 2,027 | 257 | 1,021 |
| 2002 | 7,849 | 2,195 | 695 | 1,375 | 2,210 | 238 | 1,136 |
| 2003 | 7,933 | 2,217 | 673 | 1,319 | 2,362 | 219 | 1,143 |
| 2004 | 7,954 | 2,259 | 644 | 1,233 | 2,489 | 217 | 1,112 |

*1998 onwards: number of person work years, before 1998: number of posts and positions

Source: KOTA

Proportion of women (%) among teaching staff 1996-2004

| | Professors | Senior assistants | Assistants | Lecturers | Full-time untenured teachers |
|------|------------|-------------------|------------|-----------|------------------------------|
| 1996 | 16.4 | 28.6 | 38.3 | 48.8 | 57.2 |
| 1997 | 17.7 | 30.0 | 39.2 | 54.9 | 66.7 |
| 1998 | 18.4 | 30.0 | 42.7 | 51.0 | 59.6 |
| 1999 | 17.9 | 33.3 | 45.3 | 53.9 | 59.7 |
| 2000 | 20.1 | 36.9 | 52.3 | 58.4 | 81.2 |
| 2001 | 20.4 | 33.7 | 47.5 | 54.1 | 66.9 |
| 2002 | 21.2 | 36.8 | 48.9 | 54.1 | 65.5 |
| 2003 | 21.7 | 36.6 | 49.7 | 56.8 | 78.5 |
| 2004 | 22.0 | 39.3 | 55.3 | 58.5 | 72.8 |

Source: KOTA

Other personnel 1996-2004*

| | Total | Budget posts | Academy of Finland | Other sources |
|------|--------|--------------|--------------------|---------------|
| 1996 | 17,284 | 8,730 | 1,393 | 7,161 |
| 1997 | 17,514 | 9,040 | 1,296 | 7,178 |
| 1998 | 19,043 | 9,852 | 1,709 | 7,482 |
| 1999 | 19,800 | 10,167 | 1,896 | 7,737 |
| 2000 | 19,502 | 10,031 | 2,064 | 7,407 |
| 2001 | 20,377 | 10,550 | 2,228 | 7,599 |
| 2002 | 21,043 | 10,892 | 2,344 | 7,807 |
| 2003 | 21,484 | 11,284 | 2,330 | 7,870 |
| 2004 | 21,954 | 11,624 | 2,348 | 7,982 |

*The budgeted number of full-time equivalents (FTEs) in 1996-1997 includes vacancies at graduate schools. As of 1998, the number of FTEs at graduate schools is based on the source of funding.

Source: KOTA

Status of holders of Master's degrees following graduation

| Year of graduation | Master's degree | STATUS ONE YEAR AFTER GRADUATION (%) | | | | | Unemployed two years after graduation (%) |
|--------------------|-----------------|--------------------------------------|---------------|----------|-------|------------|---|
| | | Employees | Entrepreneurs | Students | Other | Unemployed | |
| 1993 | 9,427 | 72.2 | 2.1 | 9.4 | 6.4 | 9.9 | 13.8 |
| 1994 | 9,616 | 61.1 | 1.6 | 19.2 | 3.6 | 14.6 | 5.3 |
| 1995 | 9,784 | 77.6 | 1.5 | 7.5 | 7.2 | 6.2 | 4.5 |
| 1996 | 10,227 | 81.8 | 1.3 | 7.7 | 3.8 | 5.3 | 3.5 |
| 1997 | 10,661 | 83.2 | 1.7 | 6.0 | 4.9 | 4.2 | 3.5 |
| 1998 | 11,306 | 83.3 | 1.1 | 5.1 | 5.1 | 3.7 | 3.0 |
| 1999 | 11,834 | 84.5 | 1.2 | 4.2 | 4.5 | 3.5 | 2.8 |
| 2000 | 11,489 | 84.7 | 1.2 | 3.9 | 3.5 | 3.3 | 2.8 |
| 2001 | 11,556 | 83.5 | 1.1 | 5.2 | 3.2 | 3.7 | 3.4 |
| 2002 | 12,038 | 82.3 | 1.2 | 4.9 | 3.1 | 4.8 | ... |

Source: KOTA

Unemployment rate (%) among holders of Master's degrees or postgraduate degrees, 1991-2003* (population aged 20-64)

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003* |
|--|-------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Master's degree | 2 | 3.7 | 5.1 | 4.9 | 4.3 | 5.4 | 4.5 | 4.0 | 3.9 | 3.6 | 3.6 | 3.7 | 4.3 |
| Men | 2.1 | 3.6 | 4.8 | 4.4 | 4.0 | 4.9 | 4.0 | 3.6 | 3.5 | 3.2 | 3.3 | 3.5 | 4.0 |
| Women | 2 | 3.8 | 5.5 | 5.4 | 4.7 | 6.0 | 5.0 | 4.5 | 4.3 | 3.9 | 3.9 | 3.8 | 4.4 |
| Postgraduate or comparable degree | 0.8 | 1.4 | 1.8 | 1.9 | 2.0 | 2.7 | 3.0 | 2.5 | 2.5 | 2.2 | 2.2 | 2.4 | 2.8 |
| Men | 0.8 | 1.4 | 1.7 | 1.9 | 2.0 | 2.6 | 2.8 | 2.3 | 2.2 | 2 | 1.9 | 2.2 | 2.7 |
| Women | (1.0) | 1.5 | 2.2 | 2.1 | 2.1 | 2.9 | 3.4 | 3.0 | 3.1 | 2.8 | 2.7 | 2.9 | 3.1 |

*) Preliminary figures

() = less than 30 unemployed persons

Source: Statistics Finland

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