

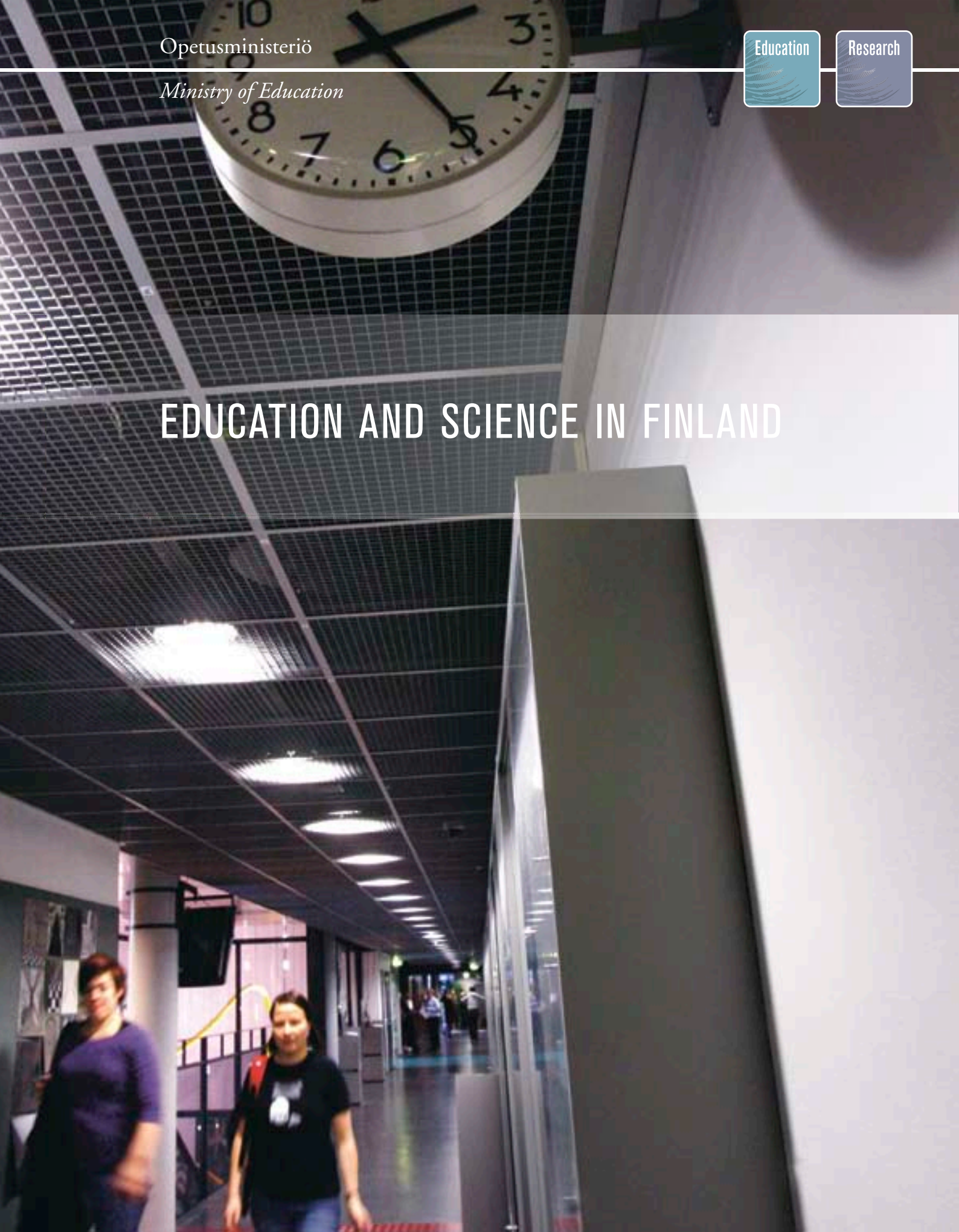
Opetusministeriö

Ministry of Education

Education

Research

EDUCATION AND SCIENCE IN FINLAND



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TRENDS IN FINNISH EDUCATION AND SCIENCE POLICY

Investments in competence, education, training and learning are the best policy for the future. Education has been a success factor for Finland – in a global world, competence will play an increasingly significant role. Learning, competence, innovativeness and creativity are key.

There are also challenges ahead, most notably the drastic change in the age structure. The population is ageing while younger age groups remain relatively small. Demographic changes will place challenges on development of education policy and services.

Pre-primary and basic education provide capabilities for lifelong learning. In the years to come, investments in basic education will focus strongly on quality improvement with a view to allowing schools to concentrate on their core tasks: teaching and learning. Resources are allocated to measures such as strengthening guidance counselling and special needs education and to reducing sizes of teaching groups.

The mission of general upper secondary education as an all-round track preparing students for further studies will be consolidated by safeguarding high-quality teaching and learning. The cornerstones of high-quality teaching are competent teachers and headteachers, complete with diverse educational provision, including modern learning environments, teaching methods and functional facilities. Attention must be focused on guidance counselling at upper secondary schools in

order for students to complete their studies within the standard timeframe and then move directly on to further studies.

Contacts between vocational education and training (VET) and the world of work will be improved. Linking the world of work to VET is important in terms of students' motivation, the quality of teaching and the relevance of competence to working life. A major challenge is to guarantee teachers' working life skills.

Higher education institutions play a key role in consolidating the highest level of competence. The entire higher education field is on its way to reform. The key objectives are to improve the quality of teaching and research and to reinforce the regional impact of polytechnics and the social impact of universities.

The polytechnic sector has witnessed major institutional mergers, making polytechnics stronger and more effective both in regional and in national and international terms. Another important part of structural development is clarification of the division of work between universities and polytechnics.

Several significant reform projects are underway within universities. Universities will be made more independent in relation to central government. Their financial autonomy will be increased by allowing them to assume the status of legal persons under public law or foundations under private law. The

primary aims of the reform of the Universities Act are to strengthen the autonomy of universities and to secure opportunities for cutting-edge research and teaching at each university.

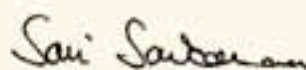
Structural development of universities will continue in parallel with the reform of the Universities Act. Its priority project is the Aalto University being created within the Helsinki Metropolitan Area by merging Helsinki School of Economics, the University of Art and Design Helsinki and Helsinki University of Technology. Other priority projects include the University of Eastern Finland, comprising the Universities of Joensuu and Kuopio, and the new University of Turku, combining Turku School of Economics and Business Administration and the University of Turku.

The key objective of this reform is crystal clear: we want to ensure that each Finnish university will become an even better place to study, teach and

carry out research. The aim is for Finnish universities to produce the knowledge that Finnish companies require, to ensure that they do not have to seek it abroad.

Reforms in the field of adult education and training focus on the administration, funding and steering of vocationally oriented adult education and training. The system needs to be both sufficiently flexible and capable of rapid response, in order to facilitate mismatch problems on the labour market and to enable equal opportunities for people from different backgrounds to maintain their competencies.

Attention will be paid to core funding and resources for research. The objective for science policy is to raise the proportion of R&D funding to account for 4% of the gross domestic product. In addition, efforts will be made to promote better use of resources and to develop research infrastructures.



Sari Sarkomaa
Minister of Education



SPECIFIC DEVELOPMENT AREAS IN EDUCATION AND TRAINING



A high level of education and the availability of high-quality, free education are the cornerstones of the Finnish welfare society. Equal opportunities for high-quality education from early childhood to higher education will be secured for everyone, irrespective of domicile, language and financial means. The aim is to raise the population's level of education and competence such that it will be among the best in the world.

The Government's specific priorities include:

High quality of teaching and qualifications. Special attention will be paid to improving the quality of basic and higher education and research.

Securing the availability of skilled labour. Efforts will be made to speed up completion of studies, improve the relevance of education and training to the world of work and reduce the proportion of people without vocational training. In addition, a comprehensive reform of vocationally oriented adult education and training will be implemented and anticipation processes will be developed.

Developing universities and polytechnics. The point of reference is a dual model based on differentiated degrees and missions, with a view to increasing international excellence and creating stronger and more effective higher education institutions. University structures will be developed, while also strengthening their financial and administrative autonomy.

The Government will secure the financial and structural prerequisites for conducting high-quality,

multidisciplinary basic and applied research and will reinforce the innovative capacity of the economy through strategic investments in competence. Strategic centres of excellence will be established.

Ensuring the availability of teaching staff. The Government will ensure sufficient provision of teacher education and training, improve teachers' opportunities for continuous professional development and enhance teachers' working conditions.

The Government Programme specifies environmental education, entrepreneurial education and online instruction as special focus areas at all levels of education. The aim is to promote creativity and a wide range of talent and innovativeness.

Entrepreneurial education will be diversified and expanded in order to enhance contacts between education and the world of work and to promote entrepreneurship. Initiative and enterprise will increase students' success in society, further studies and working life.

Online instruction will be developed, while also supporting information society projects within educational institutions. The aim is for all citizens to have equal opportunities to function in a knowledge-based society. Pupils in basic education learn fundamental ICT skills, which are further developed at upper secondary level; ICT professionals and researchers are trained in higher education. Online instruction also improves regional accessibility of adult education and training.

THE EDUCATION SYSTEM

The Finnish education system has three levels: basic education, comprising primary and lower secondary levels; upper secondary education and training; and higher education. Pre-primary education is available to children in the year preceding compulsory schooling. Basic education is uniform nine-year general education given in comprehensive schools. The upper secondary level comprises vocational education and training and general education. Higher education is provided at polytechnics and universities.

Adult education and training is available at all levels. Qualifications and provision are being developed in order to promote recognition of competencies acquired in different ways and to increase training arrangements suitable for the needs

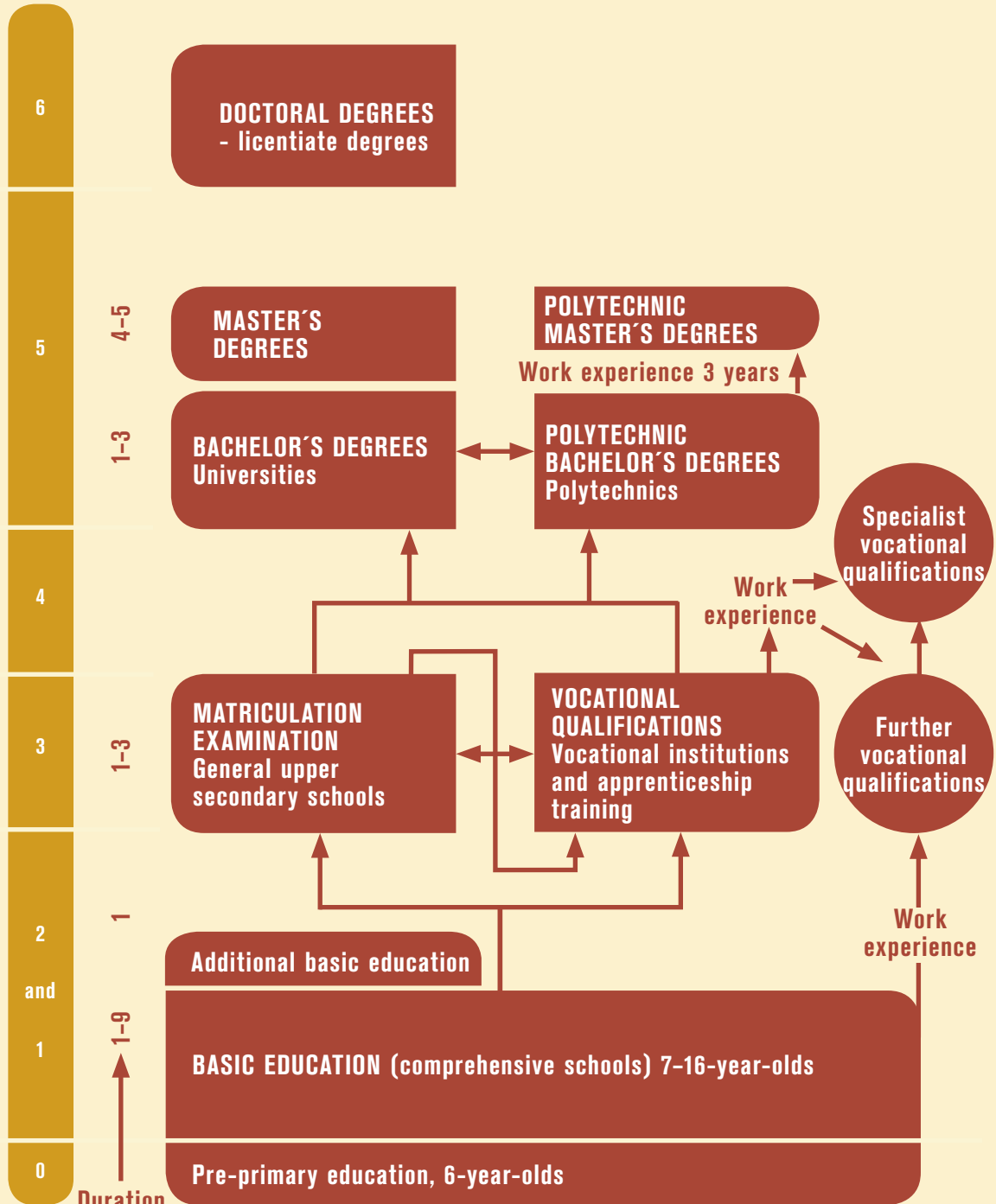
of the world of work and the adult population. In addition, liberal adult education offers a wide range of recreational studies and education which develop competencies and citizenship skills.

Pre-primary education, basic education and upper secondary education and training, complemented by early childhood education and before- and after-school activities, form a coherent learning pathway that supports children's growth, development and well-being. Pre-primary and basic education provide capabilities for lifelong learning.

Students' transition from one level of education to the next is safeguarded by legislation. Both general and vocational upper secondary certificates provide eligibility for further studies in universities and polytechnics.

THE FINNISH EDUCATION SYSTEM

ISCED-classification



ISCED-classification

- 0 Preprimary education
- 1 Primary education or first stage of basic education
- 2 Lower secondary or second stage of basic education
- 3 (Upper) secondary education
- 4 Post secondary nontertiary education
- 5 First cycle of tertiary education
- 6 Second cycle of tertiary education

ADMINISTRATION AND FINANCING OF EDUCATION AND TRAINING

Parliament passes educational legislation and determines the general lines of education policy. The Government and, as part of it, the Ministry of Education are responsible for planning and implementing education policy.

As the highest education authority in Finland, the Ministry of Education is responsible for implementing the education policy adopted by Parliament and the Government. The Ministry drafts legislation pertaining to education and training, prepares the education and culture main class for the state budget proposal and drafts government decisions relating to education. Almost all forms of publicly funded education and training are subordinate to or supervised by the Ministry of Education.

The key education agency is the National Board of Education, which administers matters relating to comprehensive schools, upper secondary schools and vocational education and training. The National Board issues national core curricula and regulations governing pupil and student assessment.

The regional administration is run by five State Provincial Offices, which also deal with educational matters, notably monitoring education and training and legal protection in the sector. In addition, the State Provincial Offices provide information-based guidance for schools and local authorities within their regions and evaluate basic services. The regional administration will be reformed by 2010, delegating

the duties of the current Education and Culture Departments of Provincial State Offices to new regional authorities.

The local authorities (municipalities) have a statutory duty to provide pre-primary and basic education. They also arrange upper secondary education and training. Local authorities enjoy self-government guaranteed by the Constitution and their duties and responsibilities are based on legislation. The local level is largely responsible for the organisation and the forms of provision in education. Education providers and maintaining organisations decide on practical arrangements, such as teacher recruitment.

There are several independent expert bodies in the field of education and training. The Matriculation Examination Board is responsible for managing the national matriculation examination taken at the end of upper secondary school and for setting and assessing the tests. Expert bodies in vocational and work-based training include field-specific National Education and Training Committees and a National Co-ordination Group for Education and Training. In addition, there are separate bodies responsible for the evaluation of education and training. The Adult Education Council appointed by the Government for a term of three years at a time is the advisory body in matters relating to adult education and training.

The Centre for International Mobility (CIMO), operating under the auspices of the Ministry

of Education, promotes internationalisation of education and training. CIMO co-ordinates and implements exchange and scholarship programmes and is responsible for implementing nearly all of the European Union's education, training, culture and youth programmes at the national level.

Steering

The Ministry of Education steers the implementation of education policy in the entire education system, with the exception of some fields subordinate to other ministries. The main steering instruments employed by the Ministry of Education are legislation, funding, information-based guidance, and licensing policy. 'Steering' refers to all mechanisms used to regulate operations and implement stated objectives.

Normative steering comprises Acts, Decrees, the national core curricula and qualification requirements, and other rules and regulations. The funding instruments include government transfers to local authorities and performance management; these are complemented by information-based guidance. The evaluation of education and training has been gaining importance as a steering tool.

The primary statutes governing general education are the Basic Education Act and Decree, the General Upper Secondary Schools Act and Decree, and the Act and Decree on Basic Education in the Arts. Other key tools in normative steering are Government decisions on the objectives of education and training and on the allocation of lesson hours, and the national core curricula.

Vocational education and training (VET) is governed by the Vocational Education and Training Act and Decree. Other important steering mechanisms include authorisations to provide vocational education and training, which are granted by the Ministry of Education; Government and the Ministry of Education decisions on the structure of qualifications and the core subjects; and the national core curricula.

In higher education, the key steering instrument is performance management. Polytechnics and universities agree with the Ministry of Education on

how to promote the objectives of higher education policy in practice. The polytechnics' and the universities' performance agreements specify targets both for each institution and for the entire higher education sector for a three-year period.

Normative steering in adult education and training largely rests on legislation governing vocational adult education and training, the financing of education and culture, and liberal adult education. As regards liberal adult education, the Ministry's main steering tools are authorisations to maintain adult education institutions and resource allocation. Information-based guidance is being piloted in liberal adult education. Vocational adult training is steered through authorisations to provide further vocational training, while steering of adult education at higher education institutions is carried out as part of performance agreements.

Financing

The Ministry of Education finances general education, VET, polytechnic education and R&D, university education and research, continuing vocational and professional education, liberal adult education, and morning and afternoon activities for schoolchildren.

The Government grants statutory and discretionary financing for operating costs and for construction and renovation projects to local authorities and other education providers. Government funding for local authorities is not earmarked, which means that the local authorities are free to decide how to use it. Statutory government funding covers 45% of operating costs. Funding is based on certain quantitative indicators, such as the number of pupils/students, other quantitative criteria, and unit costs determined each year in advance. Higher education institutions and vocational education and training also receive some funding based on performance. The funding system for further vocational training and liberal adult education does not include statutory contributions to local authorities, which means that customer fees play an important role in covering the costs.

Starting from the beginning of 2010, government funding for pre-primary and basic education will be combined with government funds to cover social, health and certain other types of expenditures, which will be transferred to local authorities as a lump sum.

Local authorities provide almost all pre-primary, basic and general upper secondary education. About half of the vocational education and training providers are local authorities or municipal education consortia. In addition, registered associations and foundations may function as education providers.

Evaluation

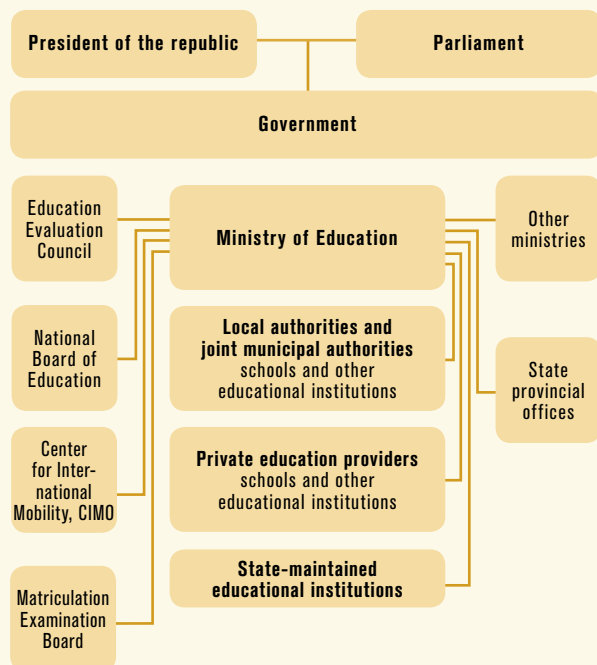
Education providers have a statutory duty to evaluate their own operations and participate in external evaluation. The purpose of evaluation is to collect information in support of education policy decisions, information-based guidance and performance management. The purpose of evaluation is to bring about continuous improvement of the quality of

education, training, research and other activities. Evaluations relating to education and training are carried out at local, regional and national levels. Finland also participates in international reviews.

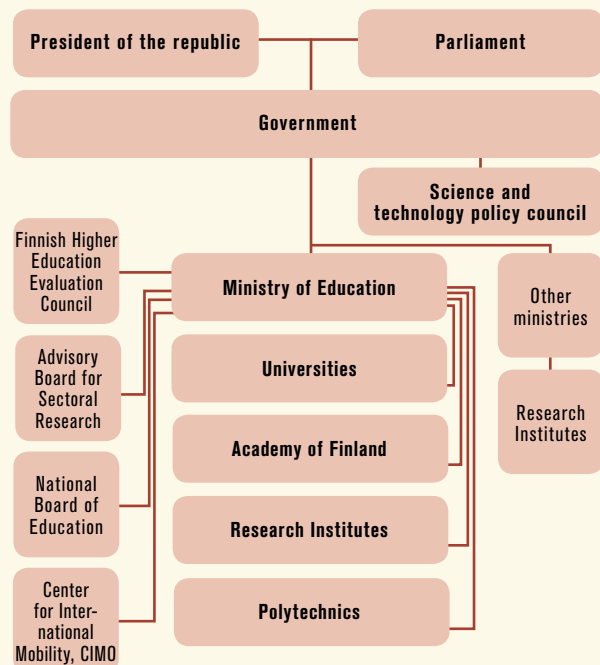
Evaluation of universities and polytechnics is the responsibility of the Finnish Higher Education Evaluation Council (FINHEEC), which operates in conjunction with the Ministry of Education. The FINHEEC is an independent expert body responsible for helping higher education institutions and the Ministry of Education to evaluate higher education institutions.

The expert body in evaluation of general, vocational and adult education is the Finnish Education Evaluation Council, which functions as a network of experts. The duties of this independent Evaluation Council include evaluation of education, training and learning, development of evaluation and promotion of research into evaluation and assessment. Evaluation activities support the Ministry of Education, education providers and educational institutions.

Administration of basic and upper secondary education



Administration of the higher education system and research



Public expenditure on education and training (advance data for 2006)

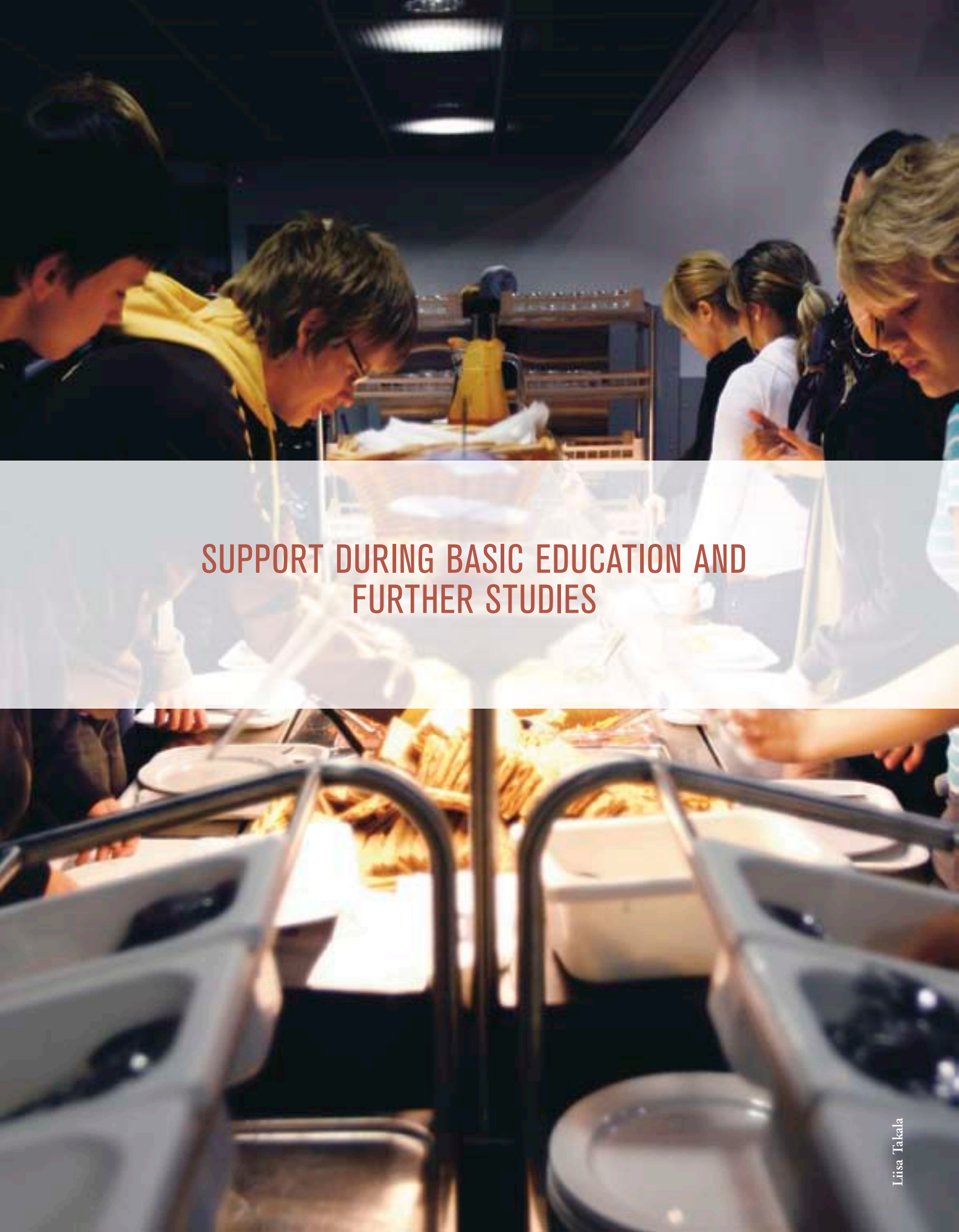
	2002	2003	2004	2005	2006
Public expenditure on education and training, million	8,934	9,359	9,776	10,042	10,311
% of GDP	6.2%	6.4%	6.4%	6.4%	6.2%

Source: Statistics Finland

Trends in expenditure on education and research in the 2004–2008 State Budgets (€ million)

	2004	2005	2006	2007	2008
University education and research	1,291	1,315	1,353	1,401	1,485
Polytechnic education	335	354	365	368	379
General education	1,800	1,900	1,970	1,942	2,087
Vocational education and training	558	576	639	663	600 ¹
Further vocational training and liberal adult education	305	320	331	340	459 ¹
Research	239	240	258	270	284
Student financial aid	740	750	777	773	836
TOTAL	5,268	5,455	5,693	5,757	6,130

¹ As from 2008, apprenticeship training has been transferred from the figure for vocational education and training to the figure for further vocational training and liberal adult education.



SUPPORT DURING BASIC EDUCATION AND
FURTHER STUDIES

Finland guarantees post-compulsory studies for the whole school-leaving age group. The aim is to improve people's life careers and their quality of life, prevent social exclusion and safeguard effective functioning of society and the labour market. Everyone has equal opportunity for education and training regardless of their financial situation.

Financial aid and other social benefits make for efficient studies. Financially secure students can plan their studies and study full-time, which shortens study times. Student financial aid ensures subsistence for the duration of full-time study. The aim is for financial aid to increase equality between students and promote efficient completion of qualifications. The financial aid system is developed in line with education policy objectives.

Schools monitor the health and well-being of their pupils and students. Pupils in basic education and students at upper secondary level have the right to welfare services free of charge, such as school health care and multidisciplinary support for their growth.

Pupils in basic education and students at upper secondary level also receive free daily meals, and higher education students have access to subsidised meals. Pupils in basic education are entitled to free school transport on certain conditions. In addition, upper secondary students can apply for school travel subsidy.

Instruction is provided free of charge by all publicly funded educational institutions at all levels of education. Upper secondary and higher education students buy their own textbooks.

Student financial aid for full-time studies

Student financial aid consists of a study grant, a housing supplement and a government-guaranteed student loan. Financial aid is granted for studies in upper secondary schools and vocational education and for degree students at the higher education

level. To receive financial aid, which is means-tested, students must study full-time and progress in their studies. In higher education, student financial aid depends on the student's own income, whereas the support of upper secondary students aged under 20 depends on their parents' income.

The amount of aid depends on the student's age, the type of accommodation, the level of education and means-testing. It is also possible to receive student financial aid for studies abroad, as long as these correspond to studies eligible for aid in Finland.

Student loans are guaranteed by the government up to 300 euros per month in higher education. Students do not need any other securities for the loan. Interest and other loan terms are agreed by students and their banks. The repayment period is usually twice as long as the loan period. Students starting their higher education studies in or after the 2005/2006 academic year are entitled to a tax concession upon graduation, provided that they complete their degree within the normative time and that they have more than 2,500 euros in student loans.

Financial aid for adult students

There is a special scheme for supporting people who take leave of absence from their work to pursue full-time studies. This adult students' financial aid is based on the level of income before studies. Its purpose is to ensure a moderate income during studies. In addition, those eligible to receive adult students' financial aid can also apply for government-guaranteed student loans. Adult students who are not eligible in the adult student scheme may be granted regular student financial aid for the duration of their full-time studies.

Adults can pursue self-motivated studies during a job alternation leave, which is based on an agreement between an employee and an employer. The employee receives an allowance during the leave of absence, which is equivalent to 70–80% of their unemployment benefit. Unemployed adults who want to pursue self-motivated studies receive training allowance.

Expenditure on student financial aid in 2006 and 2007 (€ million)

	2006	2007
Study grant	416	402
Housing supplement	251	243
Government loan guarantees and interest subsidy	28	31
Meal subsidy for higher education students	21	24
Assistance to cover rental costs	4	4
School transport subsidy	31	32
TOTAL	751	736

Source: The Social Insurance Institution of Finland

Beneficiaries of student financial aid by level of education

	2004	2005	2006	2007
Upper secondary schools	29,355 (24%)	27,382 (23%)	25,787 (23%)	27,354 (24%)
Vocational institutions	98,764 (75%)	96,775 (73%)	95,421 (70%)	97,203 (71%)
Polytechnics	97,894 (83%)	97,043 (82%)	95,399 (82%)	93,348 (79%)
Universities	96,604 (61%)	96,737 (60%)	95,674 (60%)	94,139 (59%)

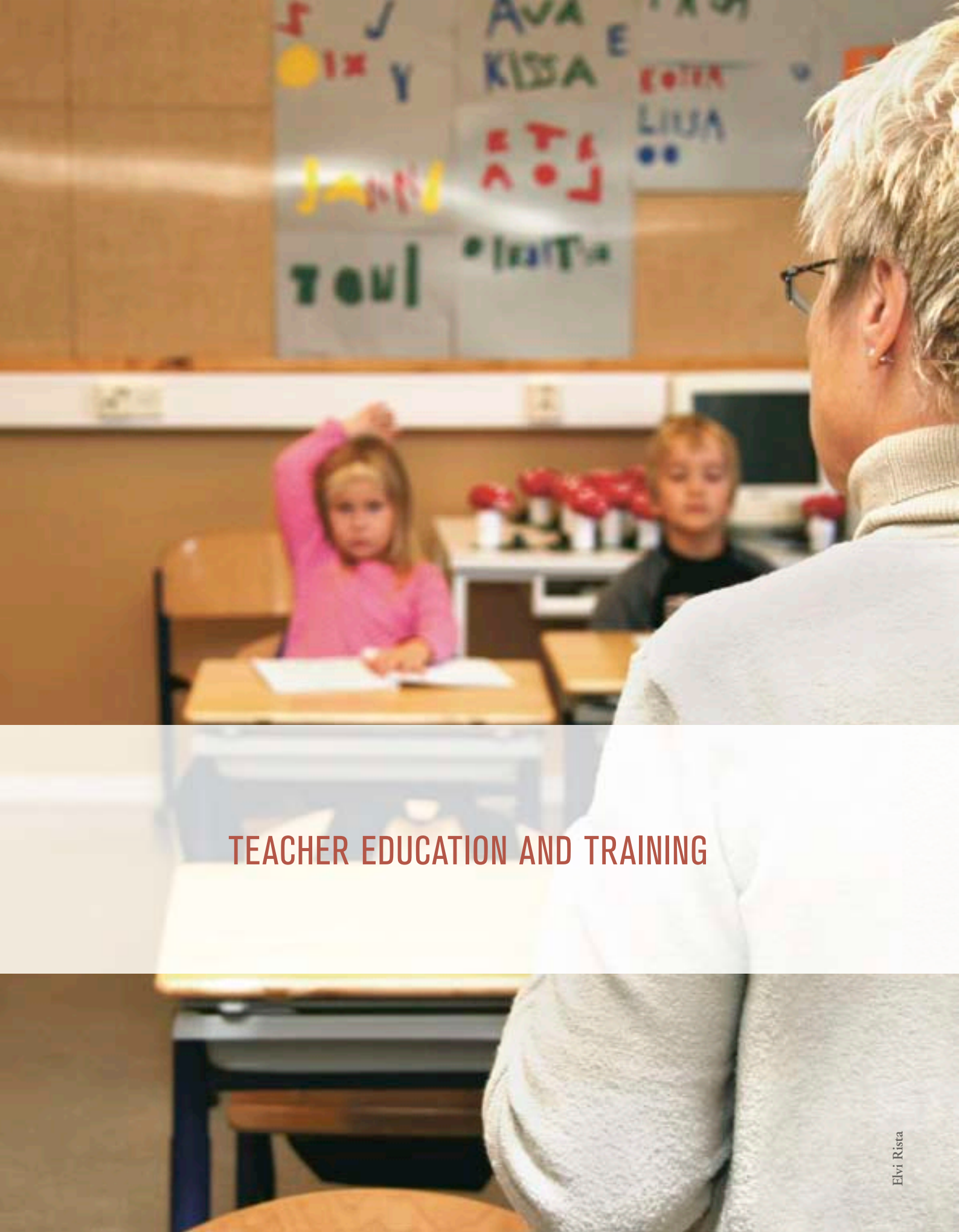
Source: The Social Insurance Institution of Finland

Amount of study grant as from 1st August 2008 (€ per month)

	€
Higher education students	
living with parents and aged under 20	55
living with parents and aged 20 or over	122
living elsewhere and aged under 18	145
living elsewhere and aged 18 or over	298
Students in other institutions	
living with parents and aged under 20	38
living with parents and aged 20 or over	80
living elsewhere and aged under 18	100
living elsewhere and aged 18 or over	246

Source: Ministry of Education





TEACHER EDUCATION AND TRAINING

Finns hold the teaching profession in high esteem and only a small proportion of those applying for teacher education are admitted. Teachers are educated at universities, where they complete a higher university degree (Master's). Teacher education is provided by 11 universities, one of which is a Swedish-language institution. University teacher education aims to provide students with resources to function independently as teachers, instructors and educators.

Class teachers teach all subjects in years 1–6 of basic education (primary level). They may also work in pre-primary education and as instructors of extracurricular morning and afternoon activities. Class teachers major in education sciences. The scope of the degree is 300 ECTS credits. Class teachers can also study for a subject teacher qualification.

A Master's degree is also the basic requirement for subject teachers working with year-classes 7–9 of basic education (lower secondary level), for upper secondary teachers, for teachers of general subjects in vocational education and training, and for teachers in adult education and training. The degree is 300–350 ECTS credits. In addition to studies in the major and minor subjects, subject teacher qualifications comprise pedagogical studies of at least 60 ECTS credits, including teaching practice.

Universities also educate special needs teachers and guidance counsellors. Special needs teachers work in basic education and in vocational education and training. Guidance counsellors mostly work with year-classes 7–9 of basic education, upper secondary schools and vocational institutions.

Vocational teacher education

Vocational teachers are trained by five vocational teacher education colleges attached to polytechnics. These provide pedagogical education for those wanting to teach in vocational institutions, polytechnics and

adult education and training. Swedish-language vocational teacher education is provided by the Swedish-language Åbo Akademi University.

The training is 60 ECTS credits, comprising studies in education, vocational pedagogy and teaching practice. It provides knowledge and skills needed to instruct different kinds of learners and to develop teaching in response to changes in occupations and the world of work.

Continuing education to update competence

Teachers already active in working life can update their professional competence on an ongoing basis. The purpose of continuing professional education is to maintain and update teachers' pedagogical skills. It has been found that continuing education promotes teachers' satisfaction at work.

Responsibility for teachers' in-service training mainly rests with employers, who are usually local authorities. They have an obligation to provide teachers with a minimum of three days of training every year. This training is provided free of charge for teachers, who also receive full pay for their training days. The central government also arranges continuing training in order to ensure opportunities for educational staff to participate in professional development programmes to maintain and expand their professional competence on a regular basis, regardless of the financial situation of their employer. Government-funded continuing training promotes implementation of education policy reforms and ensures comprehensive participation of the entire teaching staff in training for professional development. About 22,000 people participate in this training every year, equating to about a fifth of the total number of teaching staff.



PRE-PRIMARY AND BASIC EDUCATION

Pre-primary and basic education create a foundation for lifelong learning. Pre-primary education promotes children's growth, development and learning opportunities equally throughout the country. It develops children's social and ethical skills, oral expression, language awareness and skills relating to literature and mathematics.

The objective of basic education is to support pupils' growth into humane and ethically responsible members of society and to equip them with the necessary knowledge and skills. Education must promote civilisation and equality in society and enable pupils to participate in education and otherwise develop themselves during their lives. Another aim is to guarantee educational equality throughout the country.

The key areas for improvement in basic education are improving the quality of education, reducing group sizes, consolidating remedial teaching and special needs education, guidance counselling and pupil welfare services and investing in school club activities. Co-operation between parents and schools is promoted.

All children permanently residing in Finland have a statutory obligation to complete the basic education syllabus. Children can do this either by attending comprehensive school or by acquiring equivalent knowledge and skills in some other way. Virtually all children (99.7%) complete basic education. Children can participate in pre-primary education in the year preceding compulsory schooling.

Pre-primary education is voluntary

Local authorities have a statutory duty to provide pre-primary education. For children participation is voluntary, but almost all children go to pre-primary school, which usually starts at the age of six. Pre-primary education is geared towards developing

children's learning skills as part of early childhood education and care.

Early childhood education and care is an entity of care, education and instruction. The methods used in it – play, physical activities, problem-solving and concrete experiments – support children's all-round development. The average length of a pre-primary school day is four hours.

Basic education for whole age groups

Finnish children start their actual schooling at the age of seven at a comprehensive school. Basic education is provided free of charge for all and the nine-year education is the same for all pupils. By completing basic education, pupils have done their compulsory schooling. It does not lead to any specific qualification, but the leaving certificate gives eligibility for all types of upper secondary education and training.

A school year is 190 school days, starting in mid-August and ending in early June. The summer holidays are over two months.

The maximum duration of a school day is five lessons during the first two years of basic education and up to seven lessons after that. This makes between 19 and 30 hours a week, depending on the pupils' age.

The government determines the national objectives of basic education and the allocation of lesson hours between different subjects. The National Board of Education draws up the national core curriculum, which individual local authorities and schools use as a basis for their own curricula.

The language of instruction is mostly Finnish or Swedish, but also the Sami, Roma or sign language may be used. Foreign languages may also be used in instruction, provided that it does not jeopardise pupils' learning. Sami-speaking pupils residing in the Sami home area in Lapland have the right to be taught primarily in the Sami language. Pupils with hearing impairments must be taught in sign language, where necessary.

Subjects in basic education

- Mother tongue and literature
- Foreign language (A language)
- Foreign language (B language)
- Mathematics
- Environmental studies
- Biology and geography
- Physics and chemistry
- Health education
- Religion/Ethics
- History and social studies
- Music
- Visual arts
- Craft
- Physical education
- Home economics
- Guidance counselling
- Optional subjects

Special needs education and additional education in support of pupils

Special needs education is intended for pupils who cannot follow regular education owing to a disability, illness, delayed development or some other reason. Whenever possible, special needs education is integrated into regular education or given in a special class. It is also possible to extend the duration of compulsory schooling for special needs pupils, in which case compulsory schooling starts in the year when the child turns six and lasts 11 years.

Young people who have completed the basic education syllabus can continue their education for one extra year. This voluntary '10th grade' is intended to help and encourage young people to continue their studies at upper secondary level.

Morning and afternoon activities and basic education in the arts promote ethical growth

Local authorities also organise voluntary extracurricular morning and afternoon activities for first and second year pupils and for all special needs pupils in basic education. The purpose of these diverse, supervised activities is to support home and school education and promote children's well-being and emotional and ethical growth.

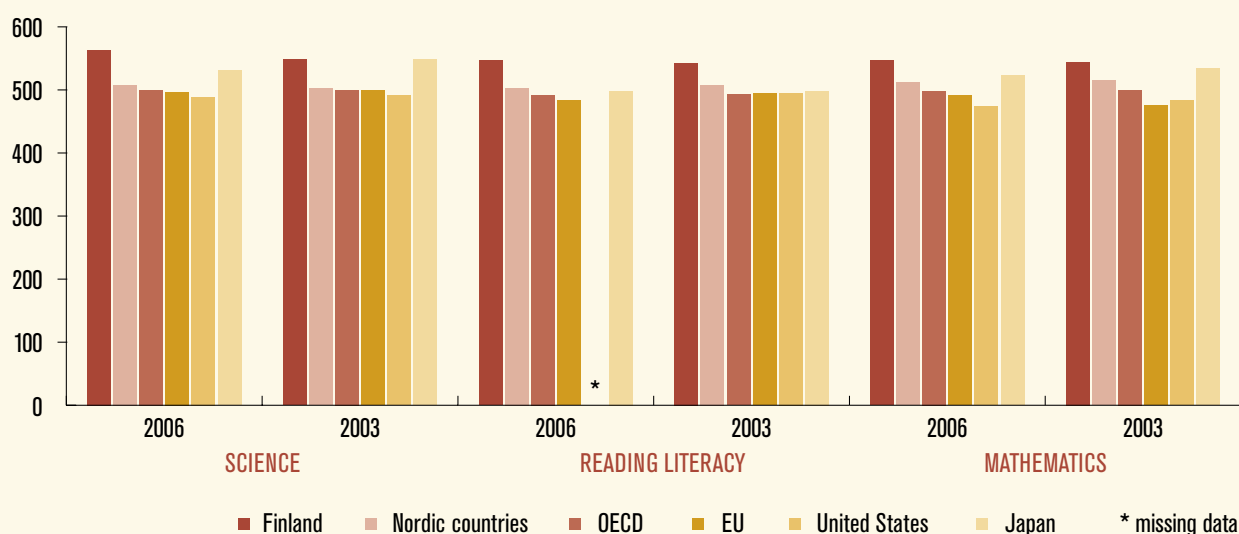
One form of these activities is extracurricular basic education in the arts. It is goal-oriented education progressing from one level to the next. It teaches children skills in self-expression and capabilities needed for vocational, polytechnic and university education in the chosen art form. The objectives and core contents are determined in national core syllabi devised by the National Board of Education for nine different art forms. The network of government-funded art education institutes comprises 88 music institutes and 23 schools in other arts. Moderate fees may be charged both for morning and afternoon activities and for basic education in the arts.

Pupils and comprehensive schools

	2003	2004	2005	2006	2007
Pre-primary education					
– number of pupils	59,850	58,400	57,940	57,930	57,510
Basic education					
– new pupils	61,300	59,830	57,550	58,000	57,650
– basic education certificates awarded	60,830	63,830	63,760	66,000	65,570
– number of pupils	583,130	581,080	578,110	568,720	560,610
Number of comprehensive schools	3,808	3,720	3,579	3,393	3,263

Source: Ministry of education

Average performance scores in PISA 2003 and PISA 2006 assessments



Success in international comparisons of education

Finland has fared well in international comparisons, such as the OECD Programme for International Student Assessment (PISA), which assesses mathematics, science, reading literacy and problem-solving skills among 15-year-olds. In PISA the learning results of Finnish basic education pupils rated at the top of the list in the key subjects, while differences between pupils, schools and different regions were comparatively small.

The main assessment area in the PISA 2006 survey was science skills. Finland's result was significantly better compared with any other country participating in this survey and its score was the highest ever in the history of PISA surveys. Finnish pupils' skills are at a high level in all areas of natural sciences.

Finnish pupils are also more positive about science learning than pupils in OECD countries on average. They appreciate natural sciences, because scientific and technological advances improve people's living conditions and because they help people to understand the world around us.

Finland has also retained its excellent standards in young people's reading literacy and mathematics skills. Finnish pupils ranked best in mathematics and

second best in reading literacy within the OECD countries. Pupils' reading literacy has remained almost at the same level in all PISA surveys ever since the 2000 assessment, while their average score in mathematics has increased since 2003.

There are many reasons for this success. The Finnish education system guarantees children and young people equal basic education, irrespective of their social status, gender and ethnic background. Education is provided free of charge, and the comprehensive services, such as school meals, school transport subsidies and pupil welfare services, are available to everyone free of charge. Teacher education guarantees instruction of a high standard. Responsibility for education rests with local authorities, in other words close to children and their homes. Finns believe in the benefits of education and there are long traditions for co-operation between homes, schools and different authorities.

One factor contributing to the high rate of reading literacy in Finland is the comprehensive library network, where everyone can borrow materials free of charge. About 80% of Finns regularly use library services. Almost all municipal libraries have IT systems and Internet connections.

Regardless of the good and consistent learning outcomes, Finland also has its share of pupils and

Placement of comprehensive school leavers in further education immediately after completion of basic education

	2002	2003	2004	2005	2006
Vocational education and training (%)	36.7	37.0	38.4	39.4	40.1
General upper secondary education (%)	54.8	55.1	54.1	53.3	51.1
Voluntary additional basic education (%)	2.6	2.4	2.5	2.5	2.0
Certificate-oriented education and training or additional basic education, total (%)	94.2	94.5	95.0	95.1	93.3
Total, students	57,900	57,550	60,400	60,200	61,393

Source: Statistics Finland

students whose well-being and learning pose a major challenge. Early intervention and preventive action are a compassionate and economically profitable way of tackling the problem both in terms of society and individuals.

Comprehensive schools total 3,263

The network of comprehensive schools (3,263 in 2007) covers the entire country. The majority of pupils attend medium-sized schools with 300–499 pupils. The smallest schools have fewer than ten pupils and the largest over 900 pupils.

Local authorities provide education for children of pre-primary and compulsory school age living in their areas, and the central government shares the costs by granting statutory government transfers to education providers. The amount of the statutory government transfer is calculated on the basis of a unit cost (€/pupil) determined annually by the Ministry of Education. In 2006, central government and municipal contributions accounted for 45% and 55% of funding respectively.

Basic education for adult students at adult upper secondary schools and folk high schools

It is possible for adults to complete the entire basic education syllabus (44 courses) or study individual subjects. Basic education for adults is provided by adult upper secondary schools and folk high schools authorised by the government to provide basic education.





UPPER SECONDARY EDUCATION AND TRAINING

The post-compulsory upper secondary level is divided into general education and vocational education and training (VET). The vocational education and training sector comprises initial VET and further training. Both the general and the vocational track usually take three years and provide eligibility for further studies at universities and polytechnics.

General upper secondary schools provide non-vocational all-round education. Towards the end of their studies, students usually take the national matriculation examination and receive a matriculation certificate in addition to the school-leaving certificate.

Students in vocational education and training study for a vocational qualification. It is possible to take both initial vocational qualifications and further and specialist qualifications as competence-based qualifications, which are independent of the way in which the vocational skills were acquired.

GENERAL UPPER SECONDARY EDUCATION

General upper secondary education develops all-round general knowledge. Its objective is to support students' growth into balanced members of society and provide skills and knowledge needed for further studies. In addition, the upper secondary school equips students for lifelong learning and self-development.

General upper secondary education is course-based and ends in a national matriculation examination. The upper secondary school does not provide any specific qualifications but gives eligibility for studies in universities, polytechnics or vocational institutions.

The admission requirement for general upper secondary education is a school-leaving certificate from basic education. Students apply to general and vocational education in a joint application system. If the number of applicants exceeds the places

available, the selection is based on students' school reports. The drop-out rate is low.

Some upper secondary schools specialise in a certain subject, such as sports, art or music. In addition, some upper secondary schools provide education for and end in an international examination.

General upper secondary studies take three years

Upper secondary school students are typically aged between 16 and 19 and generally complete the syllabus in three years. Adults can study upper secondary syllabi and take the matriculation examination in adult upper secondary schools and in special adult programmes provided by ordinary upper secondary schools. Adult classes are usually arranged in the evenings. It is also possible to study only one or some subjects either for self-improvement or in order to raise former grades.

General upper secondary school studies are in the form of courses, which are 38 lesson hours on average. The entire upper secondary school is a minimum of 75 courses. Adult upper secondary education comprises a minimum of 44 courses of 28 lesson hours on average.

The general objectives and allocation of lesson hours between different subjects, subject groups and guidance counselling are decided by the Government. The National Board of Education decides on the objectives and core contents of instruction, recording them in a national core curriculum, which education providers and schools then use as the basis for their curricula.

Tuition is provided free of charge for students who complete the entire upper secondary syllabus. Fees may be charged for studies in individual subjects. Students buy their own textbooks and pay a fee for the matriculation examination.

There are plans to reform the funding criteria for studying individual upper secondary school subjects so as also to provide better support for adults' subject studies and basic education. This aims to support immigrants' educational opportunities in particular.

Number of upper secondary school students and certificates

	2003	2004	2005	2006	2007
General upper secondary education					
– new students	42,610	40,590	39,550	39,400	37,600
– matriculation examination certificates	35,180	34,650	34,060	32,790	33,100
– number of students	120,870	118,530	116,350	114,140	112,390

Source: Ministry of Education

National matriculation examination

The national matriculation examination held at the end of upper secondary school assesses the achievement of the knowledge and maturity defined in the curriculum and the objectives set for upper secondary education. The matriculation examination is arranged twice a year, in the spring and autumn. Students can take all the tests in one examination or over a maximum of three successive examination periods.

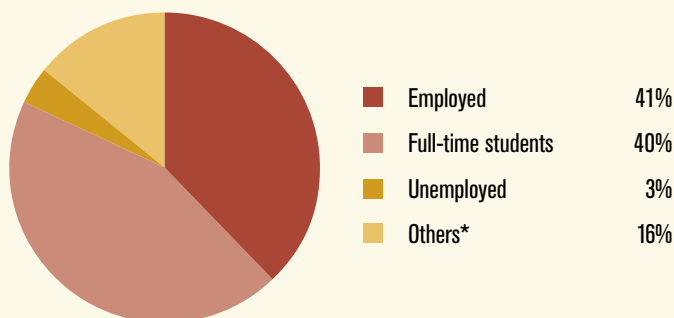
The matriculation examination includes four tests at minimum. The only compulsory test is the mother tongue test (Finnish/Swedish/Sami). For the three other tests, the candidates have a choice between the second national language (Swedish/Finnish), a foreign language, mathematics and general studies. It is also possible to take more than four tests.

The matriculation examinations are managed and the tests are set and assessed by an independent Matriculation Examination Board, which is appointed by the Ministry of Education for a period of three years at a time.

Just over 400 upper secondary schools

General upper secondary education is provided by local authorities, municipal consortia or organisations authorised by the Ministry of Education. The central government co-finances education with statutory government grants based on student numbers and unit costs per student. The majority of the 435 upper secondary schools in Finland are run by local authorities.

Placement in 2006 of those who received their upper secondary school matriculation examination certificate in 2005



* for instance conscripts doing military service

Source: Statistics Finland

VOCATIONAL EDUCATION AND TRAINING

The vocational education and training sector comprises initial and further vocational training. It provides skills required for working life and a wide knowledge base for lifelong learning and self-development. Vocational education and training is organised at vocational institutions and in the form of apprenticeship training. Vocational qualifications can also be completed as competence-based qualifications.

Vocational education and training (VET) is intended both for young people leaving comprehensive school and for employed adults. Adults may study for the same qualifications as young people. They can also participate in further vocational training, which is upgrading built on an initial vocational qualification.

Initial vocational qualifications take three years to complete

Vocational qualifications provide extensive basic skills for jobs in their fields and more specialised competence required in a specific sector. A vocational qualification gives eligibility for further studies at universities and polytechnics.

VET provides vocational competence needed to enter the labour market and for self-employment and entrepreneurship. The majority of students are comprehensive school-leavers, but about a fifth of VET provision is intended for adults who have prior knowledge and work experience.

Young people generally apply for VET as part of the national joint application system. As a general rule, applicants are required to have completed basic education. Upper secondary school graduates can also study for a vocational qualification. Their training takes less time because some general studies included in the matriculation examination are recognised as part of the qualification.

The largest component in an initial vocational qualification is vocational studies. The overall extent of the qualification is 120 credits, comprising 90 credits of vocational studies, 20 credits of general core subjects and 10 credits of free-choice studies. All vocational qualifications include at least 20 credits of on-the-job learning. One credit is equivalent to 40 hours of work, including both instruction at school and independent study. The vocational qualification usually takes three years.

VET is available in eight fields and provides qualifications for more than a hundred occupations. At present (2008), there are a total of 53 study programmes leading to 118 different initial vocational qualifications. The qualifications have been designed and are developed in co-operation with working life representatives. The number of qualifications and study programmes and the skills requirements involved are bound to the needs of the world of work.

VET is mostly provided by educational institutions, but apprenticeship training is also increasingly popular. Instruction is based on national core curricula prepared in co-operation with the world of work and approved for each qualification by the National Board of Education. VET providers devise their own local curricula on the basis of the national core curricula.

On-the-job learning forms part of qualifications

VET includes on-the-job learning of 20 credits or more. On-the-job learning means supervised, curricular training at a workplace, during which the students learn practical skills included in their qualification. The education provider and the employer's representative agree with the student on the objectives of on-the-job learning and its supervision.

Vocational skills demonstrations as part of assessment

In VET leading to a vocational qualification, student assessment includes vocational skills demonstrations arranged in practical work situations or as practical assignments. The demonstrations are used to determine how well a student has learnt skills required in working life.

The objectives and assessment criteria of vocational skills demonstrations are determined in the national core curricula. The demonstrations are designed and implemented in co-operation with business and industry. Vocational skills demonstrations completed by students are included on a specific certificate of skills demonstrations enclosed with qualification certificates.

Adults' competence-based qualifications for working life needs

The system of competence-based qualifications within vocational adult training has been developed for the needs of the world of work and allows adults to demonstrate competencies acquired through education, training and employment. The system was introduced in 1994 and has been subsequently expanded and developed up to a point where it covers the field of initial and further VET quite comprehensively. In 2006, more than 130,000 people participated in initial and additional preparatory training for competence-based qualifications, with just over 60,000 people taking competence tests. At present, the requirements of competence-based qualifications have been specified for a total of 360 vocational, further and specialist qualifications. There are 174 tripartite qualification committees involving almost 1,300 members with expertise in VET and the world of work.

Adults can sit competence-based tests for vocational, further or specialist qualifications, or for qualification modules. There are no requirements concerning how vocational skills were acquired: through education, training, employment, civic activities or leisure interests, or through different

combinations of these. Qualifications are completed by demonstrating the vocational skills specified for each qualification. There are no national core curricula for competence-based qualifications; candidates must fulfil specific requirements. The qualifications are composed of modules and the entire qualification is complete once students have passed all their required modules.

Even though it is possible to take competence tests without any preparatory training, most students participate in training before the tests. The need for preparatory training and its content and scope may vary and these are determined in an individual learning plan drawn up for each student. The number of competence-based qualifications has been growing rapidly.

The network of VET providers is developing

The network of VET providers is composed of multi-field institutions, which are often regional and provide the bulk of both initial and further vocational training. Initial and further VET is also provided by vocational adult institutions, which are mostly private, specialised vocational institutions in business and industry operating in conjunction with enterprises, and by liberal adult education institutions.

VET is either provided by vocational institutions, which is mostly contact teaching and on-the-job learning, or as apprenticeship training. Vocational institutions co-operate closely with business and industry. In addition, vocational institutions and other VET providers serve small and medium-sized enterprises and entrepreneurs who want to upgrade their knowledge and competencies.

At present, there are about 170 VET providers. The provider network is being developed in order to create a sufficiently strong structural and financial foundation for VET provision in different fields and regions. This aim is pursued by creating regional or otherwise strong vocational institutions capable of developing working life and responding to its skills needs, while safeguarding the status of specialised providers. The network of initial and further VET

providers is being composed so as to guarantee diverse and high-quality provision both for young people and adults and to meet the needs of individuals and the labour market in a flexible way.

Practical arrangements are decided by VET providers, whose operations are governed by the objectives set in legislation and in the national core curricula. VET may be provided by local authorities, municipal training consortia, registered associations, foundations, the government or state enterprises. VET providers are accredited by the Ministry of Education.

The authorisation to provide initial VET defines the fields provided and the total number of students, which also determines the maximum amount of

funding granted to the provider. Providers decide independently on organisation of their educational activities and on alignment of their provision in different fields according to labour demand within the framework of their authorisation.

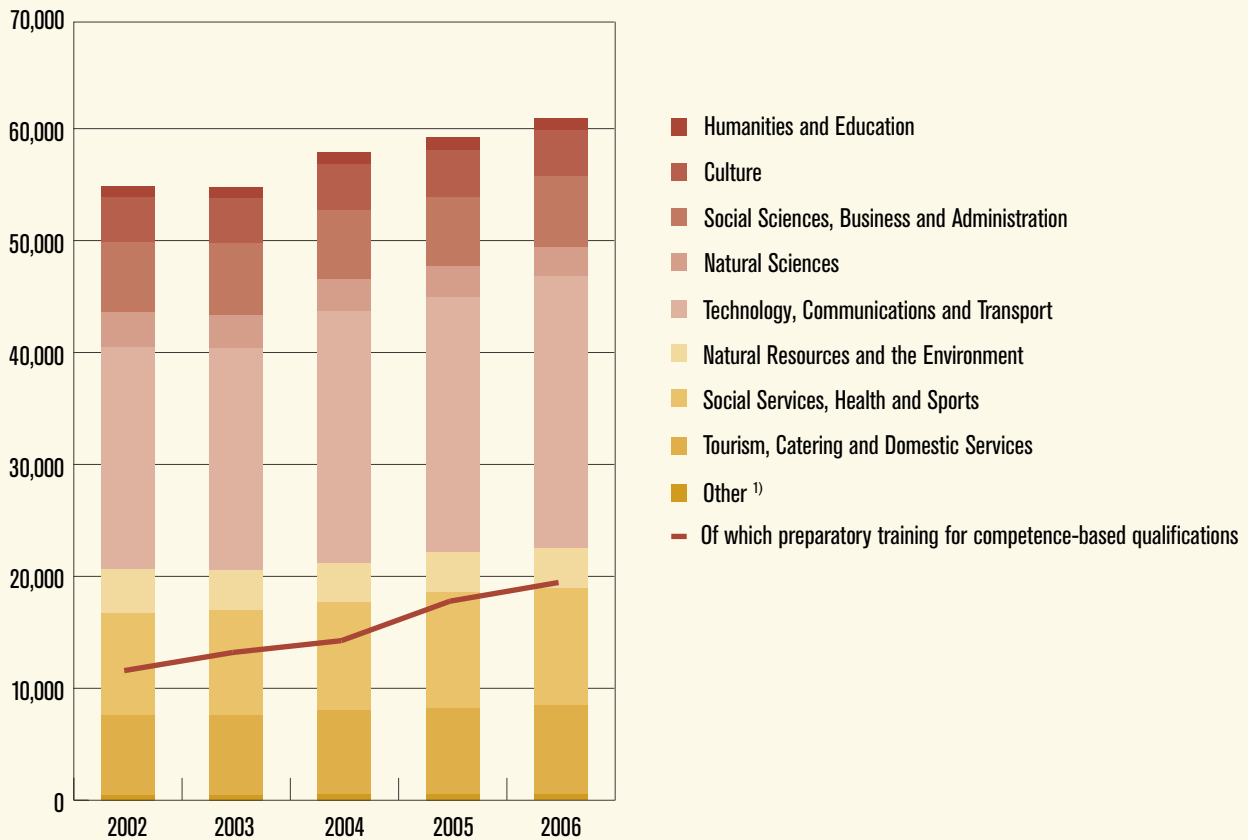
The impact of initial VET is measured by indicators such as placement of qualification-holders in employment and in further studies and the graduation rate. Part of funding is allocated on the basis of performance, which is measured by these indicators. One of the tools used to develop quality assurance is the Common Quality Assurance Framework (CQAF), developed within the Copenhagen process.

Number of students and qualifications in upper secondary and further VET

	2004	2005	2006	2007
Upper secondary VET				
New students	60,350	61,860	64,710	68,600
Qualifications awarded	36,600	37,220	37,280	38,600
Number of students	143,780	146,050	149,680	155,360
Further training				
New students	25,580	29,170	31,000	33,500
Qualifications awarded	13,040	14,320	16,170	18,100
Number of students in institutional training	24,000	28,400	33,840	35,000
Number of students in apprenticeship training	18,940	19,770	20,150	24,500

Source: Statistics Finland, state subsidy system

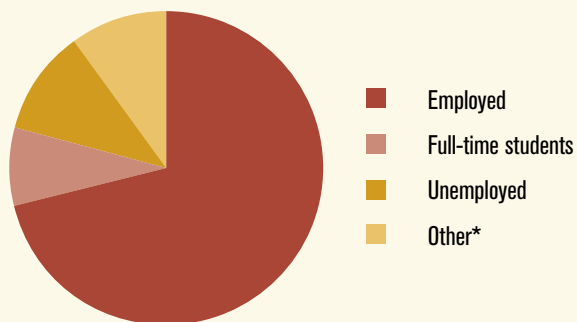
New students in upper secondary VET by field of education in 2002–2006



¹⁾ Education and training organised outside the Ministry of Education sector

Source: Statistics Finland, Finnish National Board of Education WERA web reporting service

Placement in 2006 of those gaining vocational qualifications in 2005



* for instance conscripts doing military service





HIGHER EDUCATION





The Finnish higher education system consists of two complementary sectors: polytechnics and universities. The mission of polytechnics is to train experts to serve the world of work and carry out R&D in support of education and regional development in particular. Universities conduct scientific research and provide instruction and postgraduate education based on it. The objective of higher education policy is to meet society's educational needs and produce a sufficient number of highly educated experts to meet the needs of business and industry and other sectors of society.



Responding to changes in the operating environment of higher education institutions and improving their operational quality and efficiency call for reforms to the Universities Act and for structural development of higher education institutions. Institutional profiles and priority fields are being strengthened while the network of higher education institutions is being consolidated into larger entities through mergers and collaboration mechanisms. In the years to come, the number of higher education institutions will decrease and resources will be allocated to improving the quality of education and research. New institutional structures will be in place by 2012.



POLYTECHNICS

The mission of polytechnics is to provide higher education based on the requirements of working life and its development as well as on research and artistic premises and to prepare students for professional expert assignments. In addition, polytechnics carry out applied research and development work that supports the world of work and regional development and takes the economic structure of the region into account.

The polytechnic system was set up during the 1990s, when the level of education in former vocational and higher post-secondary colleges was raised and they were compiled into larger entities. The piloting of polytechnics got underway in 1991–1992 and the first polytechnics started to operate on a permanent basis in 1996. Polytechnics are multidisciplinary and regional higher education institutions focusing on the world of work and regional development.

There are 28 polytechnics, seven of which are maintained by local authorities, 11 by joint local authorities and 10 by private organisations. In addition, there are Åland University of Applied Sciences, operating in the autonomous Åland Islands, and the Police College of Finland, which is subordinate to the Ministry of the Interior. Polytechnics are currently being consolidated into stronger entities. The number of polytechnics will drop to 26 in August 2008, as two Helsinki-based institutions will merge to form Metropolia University of Applied Sciences and two Swedish-language institutions will join forces as Novia University of Applied Sciences.

In their objectives, polytechnics emphasise the development of learning processes, quality enhancement, innovation and internationalisation.

Studies and degrees

Studies leading to polytechnic degrees are organised as degree programmes comprising core and

professional studies, elective studies, work placement and a final project.

Holders of the Bachelor-level polytechnic degree, who have additionally gained work experience, can upgrade their degree in a polytechnic Master's programme. The polytechnic Master's provides the same qualifications as a university Master's degree. In addition to a polytechnic degree, admission to polytechnic Master's programmes requires three years of work experience. These programmes are intended for gainfully employed adults holding a polytechnic Bachelor's degree or some other appropriate higher education degree. Education is organised in such a way that students can also study for degrees while they are working.

The polytechnic degrees are between 210 and 240 ECTS credits (3.5 to 4.5 years), and the polytechnic Master's from 60 to 90 ECTS credits (1.5 to 2 years) on top of it.

Each student has an individual study plan (ISP), which facilitates the monitoring of progress in studies.

National joint application mostly online

The entry requirement to education leading to a polytechnic degree is a secondary school-leaving certificate or the matriculation examination, a vocational qualification or equivalent studies abroad.

All students apply to polytechnics through a national polytechnic application system. Polytechnics themselves decide on the selection criteria, the arrangement of entrance examinations and student admissions. Almost 90% of applications are submitted in electronic format via the Internet.

Steering of polytechnics

Polytechnics are municipal or private institutions and their operating licences are granted by the Government. Polytechnics have autonomy in their internal affairs.

The Ministry of Education, the polytechnics and their maintaining organisations conclude three-year

performance agreements, in which they agree on objectives and the monitoring of their achievement and on major national development projects. Intakes and project funding are determined on an annual basis.

Central and local governments co-finance the operations of polytechnics. Government allocates resources as core funding, which is based on unit costs per student, project funding and performance-based funding. In addition to this, polytechnics have external sources of funding. Government funding

criteria for polytechnics are being developed so as to place more emphasis on degree objectives and the number of completed degrees.

Polytechnics also provide adult education and open polytechnic education geared to maintain and develop working life skills. The teaching and other arrangements in polytechnic adult education enable students to pursue degree studies alongside work. Adult students account for about 16% of all polytechnic students.

Polytechnic Bachelor's and Master's degrees

	2004	2005	2006	2007
Polytechnic Bachelor's degrees				
Entrants	32,690	33,260	32,370	32,120
Degrees awarded	20,670	21,140	20,770	20,560
Number of students	116,830	116,700	115,760	114,730
- of whom foreign students	3,730	3,930	4,600	5,300
Polytechnic Master's degrees				
Entrants	240	630	1,380	1,770
Degrees awarded	60	180	150	360
Number of students	610	1,050	2,070	3,300

Source: AMKOTA

Polytechnic fields of education by number of polytechnic Bachelor's degrees in 2007

Humanities and Education	262
Culture	1,907
Social Sciences, Business and Administration	4,312
Natural Sciences	880
Technology, Communications and Transport	5,434
Natural Resources and the Environment	620
Social Services, Health and Sports	6,120
Tourism, Catering and Domestic Services	1,391
Total	20,926

Source: AMKOTA

Placement in 2006 of those gaining polytechnic degrees in 2005

	Polytechnic Bachelor's degree	Polytechnic Master's degree
Employed	87%	95%
Full-time students	4%	2%
Unemployed	5%	2%
Others	4%	2%

Source: Statistics Finland

UNIVERSITIES

Under the Universities Act, universities must promote free research and scientific and artistic education, provide higher education based on research, and educate students to serve their country and humanity. In carrying out this mission, universities must interact with the surrounding society and strengthen the impact of research findings and artistic activities on society.

All the 20 universities in Finland are state-owned. They comprise ten multidisciplinary universities, three schools of economics and business administration, three universities of technology, and four art academies. In addition, there is a National Defence College operating within the Ministry of Defence sector. Universities receive most of their funding from the state budget. Their operations are built on the freedom of education and science and university autonomy.

University Bachelor's and Master's degrees

Universities confer Bachelor's and Master's degrees, and postgraduate licentiate and doctoral degrees. In the new degree system introduced in 2005, students first study for the lower Bachelor's degree and then for the higher Master's degree.

The scopes of studies are determined in ECTS credits. One year of full-time study is equivalent to 60 ECTS credits. Bachelor's and Master's degrees carry 120 and 180 ECTS credits respectively. In some fields, such as Medicine, degrees are more extensive and take longer to complete.

Each student has an individual study plan, which facilitates the monitoring of progress.

Students mostly selected through entrance examinations

Universities select their students independently by means of different types of entrance examinations.

An admitted student may only accept one student place in degree education in a given academic year. With a view to simplifying student selection procedures, a joint universities application system will be adopted in the 2008/2009 academic year.

Steering of universities

In addition to policy defined in the Government Programme and the Development Plan for Education and Research, university activities are governed by three-year performance agreements signed with the Ministry of Education based on performance negotiations. The agreements specify the objectives of university operations, such as degree targets, resources, monitoring and evaluation of target achievement, and development targets. During the annual performance negotiations, the universities receive feedback, first orally and later in writing, on their previous year's performance and on development needs.

Financing of universities

Universities receive their core funding from the government. The operational appropriations are largely determined on the basis of degree targets and the number of degrees awarded. The resources allocated by the Ministry of Education consist of core funding, project funding and performance-based funding. Direct government funding covers about 64% of university budgets.

Core funding is calculated by means of a core funding formula. The Ministry of Education grants discretionary project funding for major development needs. Performance-based funds are used to reward universities for the quality, effectiveness and efficiency of their operations.

Basic research in the Ministry of Education sector is largely financed by the Academy of Finland. The Academy is also responsible for the evaluation of research. Universities receive substantial external funding from various external sources for research

projects and other purposes. Universities also have income from commercial services, such as continuing professional education.

University reform underway

Universities are being developed into stronger and more independent entities so as to enable them to respond better to changes in their operating environment. Their financial autonomy will be increased by allowing them to assume the status of legal persons under public law or foundations under private law. In addition, their administration and decision-making systems and steering and funding systems will be reformed.

The entire legislation governing universities will also be reformed, as the Government is planning to submit its proposal for a new Universities Act to Parliament in the spring of 2009.

The university structures will be developed at the same time as the reform of the Universities Act. An efficient and effective network of higher education institutions requires them to enhance

co-operation and join forces. Helsinki University of Technology, Helsinki School of Economics and the University of Art and Design Helsinki will merge to form Aalto University, which will start operations as a foundation in the autumn of 2009. Other new institutions being created are the University of Eastern Finland, comprising the Universities of Joensuu and Kuopio, and the new University of Turku, aiming to consolidate Turku School of Economics and Business Administration and the University of Turku.

Lifelong learning at university

University studies and degrees have been developed to enable people to participate flexibly in education according to their life situations. Many fields offer Master's programmes and graduate-entry education tailored to different working life needs.

In addition to degree education, universities offer open university education, continuing professional education, and adult education funded by the labour administration.

Number of university students and degrees

	2004	2005	2006	2007
New students	20,970	20,786	20,150	19,648
Bachelor's degrees awarded	2,717	2,913	3,814	5,879
Master's degrees awarded	12,588	12,920	13,128	13,884
Number of students	149,167	151,030	152,165	152,198
- of whom foreign students	3,048	3,221	3,619	3,980
Doctoral education				
Degrees awarded	1,399	1,422	1,409	1,524
Number of students*	22,110	22,200	21,899	21,557
- of whom foreign students	1,579	1,663	1,747	1,834

* incl. those studying for a licentiate degree

Source: KOTA

Degrees by field of study in 2007

	Bachelor's degrees	Master's degrees	Doctoral degrees
Theology	123	238	23
Humanities	1,609	1,834	131
Art and Design	146	281	11
Music	72	151	4
Theatre and Dance	41	62	1
Education	942	1,695	86
Sport Sciences	25	118	6
Social Sciences	784	1,288	116
Psychology	70	176	27
Health Sciences	145	381	40
Law	95	481	18
Economics and Business Administration	524	1,822	97
Natural Sciences	767	1,577	363
Agriculture and Forestry	85	282	46
Engineering and Architecture	61	2,742	302
Medicine	0	536	222
Dentistry	0	66	9
Veterinary Medicine	4	41	6
Pharmacy	369	83	16
Fine Arts	17	30	0
Total	5,879	13,884	1,524

Source: KOTA

Placement of university graduates in 2005

	Bachelor's degree	Master's degree	Doctoral degree
Employees	65.6%	85.9%	78.8%
Entrepreneurs	1.1%	1.4%	2.4%
Students	30.9%	9.4%	11.2%
Others	0.3%	0.4%	3.0%
Unemployed one year after graduation	2.0%	2.8%	4.7%
Total	100%	100%	100%

Source: KOTA





ADULT EDUCATION AND TRAINING



Adult education policy is designed to provide diverse study opportunities for the adult population. Finland offers excellent conditions for lifelong learning. Adult education and training is available at all levels of education and is geared towards responding to adults' diverse educational needs, notably self-development, the upgrading of qualifications and the updating of competencies.

The ageing of the population and rapid changes in working life heighten the importance of adult education and training. Adults' opportunities to maintain and develop their competencies are particularly improved in working life with a view to promoting the objectives of occupational mobility, longer careers and a higher employment rate.

Self-motivated adult education and training within the Ministry of Education sector has been developed so as to form an effective whole with labour policy training organised by the employment administration and in-service training provided by employers. In the sectoral division of work, the Ministry of Education is specifically responsible for ensuring adequate educational provision open to everyone; a comprehensive network of adult education providers with stable operating conditions and sufficient working life skills; a qualifications system that meets the needs of the world of work and the adult population; mechanisms for recognising competencies acquired in different ways and personalisation of studies; qualified and competent teaching staff; and the quality and effectiveness of adult education and training.

Vocationally oriented adult education and training will be reformed by clarifying its administration, funding, benefits and provision. This reform covers vocational adult training, adult education at higher education institutions, labour policy training and in-service training. Changes in the world of work and the labour market, along with ageing demographics, will increase the challenges for adult education and training. Labour shortages and recruitment problems are on the increase, while the public sector is also undergoing substantial change. Comprehensive reform of adult education and training will contribute to occupational mobility and efforts to prolong careers, raise the employment rate and improve productivity.

Finnish educational institutions offer a wide range of adult education and training. It is an important part of their operations. All educational institutions except comprehensive schools and upper secondary schools intended for young people provide adult education, which means that it is available at all levels of the education system. In addition, adults can study a great variety of subjects in liberal adult education.

With the exception of further and specialist vocational qualifications, adult education and training leading to qualifications is provided free of charge. The government also subsidises other forms of education and training intended for adults in order to keep student fees at a reasonable level.

Further and continuing training to maintain competencies

Rapid changes and growing skills requirements in the labour market increase the significance of further vocational training. The stated aim to prolong work careers and promote occupational mobility entails a wide range of opportunities for adults to maintain and develop their competencies. Vocational skills can be updated in further and continuing vocational training.

In Finland, virtually all vocational and higher education institutions offer further and continuing training, from short-term courses to extensive and demanding extension programmes.

Some further vocational training is organised as apprenticeship training, which is in increasing demand. In 2008, the annual quota for further vocational training organised as apprenticeships was 27,100, while the figure for 2006 was 22,085. As from the beginning of 2008, apprenticeship training has also been possible for state and municipal civil servants. As part of the comprehensive reform of vocationally oriented adult education and training, investigations are also taking place into the possibility of expanding apprenticeship-type training into continuing education for those holding higher education degrees.

A wide variety of qualifications available through adult education and training

Adults can study for a comprehensive school-leaving certificate and the matriculation examination and parts of them in flexible arrangements geared to employed people.

The VET sector offers competence-based qualifications of three different levels: vocational qualifications, further qualifications and specialist qualifications. For a vocational qualification, the mature student demonstrates command of the knowledge and skills required for a given occupation; for a further qualification vocational skills required of a skilled worker; and for a specialist qualification knowledge and skills needed for the most demanding work assignments in the field.

There are no formal training requirements for competence-based qualifications. An adult sitting a competence test can rely on knowledge and skills acquired in former training, in working life and in leisure pursuits, but most candidates participate in some preparatory training. The competence-based qualifications are supervised by qualification committees representing employers, employees and teachers.

In polytechnics, adults study for the same polytechnic degrees as young people. The difference is that the arrangements in adult education are flexible and allow adults to study alongside work. As the entry to polytechnic Master's programmes

requires at least three years of work experience after the polytechnic degree, they are typically adult education. Universities do not have specific degree programmes for adults; instead, working-age adults study with other students. However, some Master's programmes are geared towards updating the competencies of gainfully employed adults.

Long-term professional development programmes organised by polytechnics and universities (professional specialisation studies) are intended for degree-holders to upgrade competencies required in working life.

It is also possible for adults to study parts of qualifications and degrees, which they may later include in a qualification. Adults may study different general upper secondary courses and modules included in competence-based qualifications.

There is an extensive provision of open studies which conform to the requirements of university and polytechnic degrees. They are intended to facilitate access to higher education studies. Open university education may also be provided by other educational organisations besides universities, but the education always follows university syllabi and is supervised by universities. The most important provider network consists of liberal adult education institutions. An open university student who fulfils certain criteria may be admitted to study for a degree.

Liberal adult education to support personal development

Liberal adult education supports diverse personal development and provides the knowledge and skills that adults need as active members of their community on the basis of the principle of lifelong learning. In Finland, liberal adult education means the provision of a network of institutions which has evolved over a long historical period. The aims and contents of liberal adult education are not set externally or from top down but determined by the institutions and the organisations that run them. The maintaining organisation may represent a given ideological or religious outlook or operate on the basis of local and regional educational needs.

Participation in adult education and training, people aged 18–64 (2006)

	Participated within 12 months of survey date	Last participated more than 12 months ago	Not participated
	%	%	%
Age group			
18–64	52	43	5
25–64	53	44	3
50–64	43	54	3
Gender			
Male	45	47	7
Female	58	39	3
Level of education			
Primary or lower secondary education	35	56	9
Upper secondary education	48	47	5
Tertiary education	71	29	1

Source: Statistics Finland

Adult education and training refers to education and training specifically provided and organised for adults. Figures only include education and training in which participants have spent a total of at least six hours.

The range of liberal adult education is wide. Even though the primary aim is personal development, many courses also provide the knowledge and skills that students need in working life and as members of work communities.

The providers of liberal adult education include adult education centres, folk high schools, study centres, sports institutes and summer universities. These institutions may also be authorised by the Ministry of Education to provide general upper secondary education or VET.

In the coming years, the focus in liberal adult education will be on information society studies, immigrants' language instruction and cultural education, and studies promoting active citizenship. Liberal adult education institutions are also important providers of open university education. Funding based on study vouchers has been introduced in liberal adult education to activate groups currently under-represented in adult learning.

Counselling and guidance for adult students is developing

One of the priorities in recent adult education policy has been counselling and guidance. Effective counselling and guidance services are a prerequisite for raising the participation rates in adult education and training. Specific development targets are flexible transition from one stage of education to the next, recognition of prior learning, and electronic counselling and information services. Counselling and information services also contribute to improving the relevance and effectiveness of adult education and training and encouraging population groups less inclined to participate to take up studies.

Financing of adult education and training

Qualification-oriented adult education and training is co-funded by the government and the local authorities; the exception is degree education at universities, which is totally financed by the government. Training leading to further and specialist qualifications is mostly publicly funded but may charge reasonable fees.

About half of liberal adult education costs are covered by the government and the rest mostly comes from student fees and from the maintaining organisations. The purpose of state funding is to guarantee the largest possible provision without burdening the students with high fees. About 10% of the Ministry of Education main class in the state budget is allocated to adult education and

training. About 40% of this funding is channelled into vocational adult training and apprenticeship training, a third into adult education at higher education institutions and one fifth into liberal adult education.

Employers purchase in-service training for their staff from adult education institutions and firms. The labour administration purchases a great deal of different training for unemployed people and for those at risk of unemployment.

About 1.7 million people participate in adult education and training every year, including more than 600,000 learners in liberal adult education. More than 50% of the working-age population participate in different types of adult learning. However, participation rates have reached a plateau in the 21st century.

Adult education and training and participant numbers within the Ministry of Education sector

Type of education	2006 actual	2007 estimate	2008 estimate	2009 estimate
Basic education for adult students				
certificate-oriented students	850	850	850	850
General upper secondary education for adults				
certificate-oriented students	7,588	7,500	7,000	7,000
students taking individual subjects	14,892	15,000	15,300	15,400
Upper secondary VET				
students in preparatory training for competence-based qualifications	13,094	13,290	13,800	14,500
students in school-based curricular VET for adults	2,400	2,000	1,700	1,500
students in apprenticeship training	14,500	18,100	16,600	15,050
qualifications awarded	6,840	7,600	8,000	8,200
Preparatory training for further or specialist qualifications				
students in preparatory training for competence-based qualifications ¹	24,100	25,000	26,000	28,000
students in apprenticeship training	22,085	22,204	23,420	23,000
qualifications awarded	13,000	15,000	16,000	16,000
Polytechnic adult education				
students on polytechnic Bachelor's degree programmes	18,000	18,000	18,000	18,000
students on polytechnic Master's degree programmes	1,050	2,100	2,600	3,200
students in professional specialisation studies	7,800	7,800	7,800	7,800
Open Polytechnic students	12,400	13,000	13,500	13,500
Polytechnic Bachelor's degrees awarded	4,300	4,400	4,400	4,400
Polytechnic Master's degrees awarded	180	150	850	850
University adult education				
students on separate Master's and graduate-entry programmes	6,100	6,100	6,100	6,100
students in continuing professional education	95,000	95,000	95,000	95,000
Open University students	89,000	89,000	89,000	89,000
Liberal adult education institutions²				
students at adult education centres	622,000	630,000	630,000	630,000
students at folk high schools	112,000	112,000	112,000	112,000
summer university students	35,400	36,000	36,000	36,000
students at study centres	192,200	193,000	192,000	192,000
students at sports institutes	79,300	80,000	80,000	82,600

1 The figures represent the number of students in qualification-oriented additional training, not the number of student years used as the basis for calculating statutory government transfers.

2 The actual data on student numbers for liberal adult education institutions is from 2007.



RESEARCH

Finland invests in research and development. Education, science and technology policies have been developed on a long term with a view to strengthening the national innovation system. The aim is to promote knowledge and to raise the level and visibility of Finnish research. Finland supports the international success of Finnish research by funding high-quality research and promoting the establishment and development of creative research environments. Public research funding is used to strengthen the knowledge and competence base underpinning sustainable economic growth and the country's material and intellectual welfare.

The objective of science policy is to promote science, ensure positive development of the quality, effectiveness and internationalisation of research and postgraduate education, and to bring about an efficient and balanced research system. The development of scientific research is based on the Development Plan for Education and Research and policy formulated by the Science and Technology Policy Council of Finland.

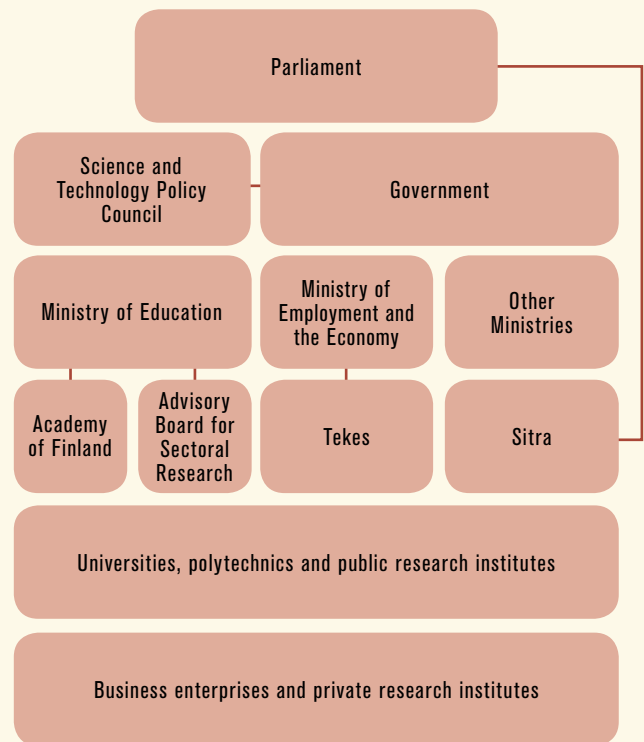
The principles and legislation governing science, technology and innovation policies are decided by Parliament. The Government and its ministries are responsible for planning and implementing science and technology policy. The Ministry of Education's remit includes matters concerning education and science policy, whereas the Ministry of Employment and the Economy is responsible for matters relating to industrial and technology policies.

The Science and Technology Policy Council plays a key role in promoting research, technology and scientific education. It develops and co-ordinates science and technology policy and prepares relevant plans and proposals. The Council is composed of the Prime Minister, who is the chair; the Minister of Education and Science and the Minister of Economic Affairs, who are vice chairs; the Minister of Finance and up to four other ministers; and representatives of funding organisations, universities, research institutes, business and industry, and employees.

In 2007, a national Advisory Board for Sectoral Research was set up under the auspices of the Ministry of Education to align national sectoral research and to support and consolidate sectoral research co-operation between ministries and different branches of administration. Its aim is to make sectoral research more systematic and promote decision-making based on research data in

all areas of social policy. Sectoral research refers to research activities aiming to support and develop social and political decision-making.

Organisations in the research system



Research investments on the increase

In 2006, Finland invested almost 5,800 million euros in R&D activities. The total R&D expenditure represented 3.45% of the gross domestic product, which places Finland among the top OECD countries once again. In 2007, expenditure is expected to exceed 6,000 million euros.

The private sector accounts for 71% of R&D funding, with the electrical and electronics industries providing more than half of overall corporate R&D investments. The higher education sector accounts for just under 19% of R&D expenditure.

Finnish scientific research has been productive, currently representing around 0.6% of global R&D activities. Publications and articles by Finnish researchers represent one per cent of all scientific publications within OECD countries and the citation rate of Finnish publications is about 13% higher than the OECD average.

During the past ten years, the number of R&D personnel in Finland has grown from 40,000 to nearly 80,000. This makes two per cent of the entire labour force, which is the highest proportion in the OECD.

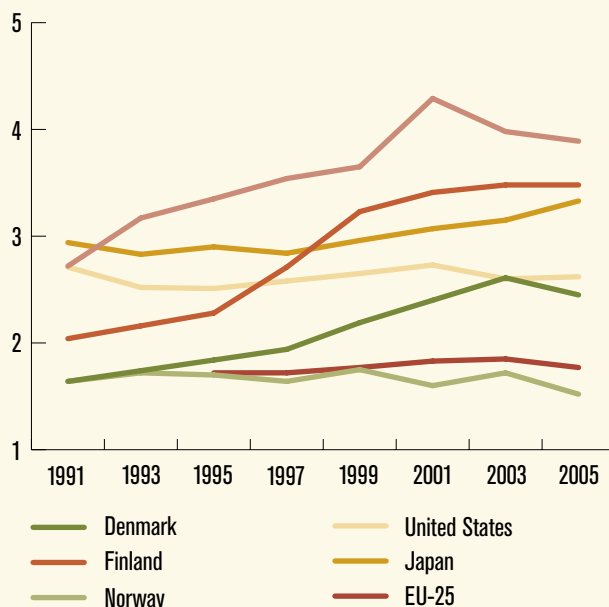
Strengthening quality through international co-operation

Finland enhances the quality and impact of research through international co-operation. Measures are taken to promote international co-operation at all levels of the research system.

Finland participates in the activities of major international bodies and organisations involved in research co-operation and is an active player in European co-operation. Finnish researchers and research organisations have fared well in the European Union's Framework Programmes for Research and Technological Development. Finland contributes to the development of the European Research Area by actively networking national research programmes.

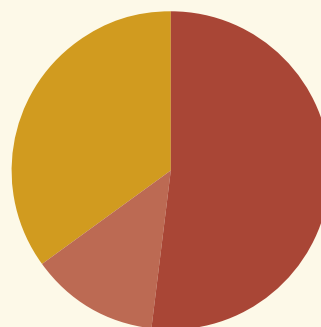
One means used to improve the quality of research is competitive public funding, which is

R&D expenditure as a percentage of GDP



Source: Statistics Finland, Science and Technology Statistics

R&D personnel by sector in 2006



Enterprises	41,700
Public sector	10,300
Higher education sector	27,900
Yhteensä	79,900

Source: Statistics Finland, Science and Technology Statistics

mostly channelled through the Academy of Finland and the Finnish Funding Agency for Technology and Innovation (Tekes). These organisations allocate more than 40% of public research funding.

In the Ministry of Education sector, the Academy of Finland is a major source of funding for scientific research. Its role is to raise the quality and visibility of Finnish scientific research through competitive research funding. Most of the Academy funding is channelled into university research. The Academy finances research projects and programmes, Centres of Excellence in Research, researcher posts, postgraduate education, and international co-operation.

Polytechnic and university research

Polytechnics mostly conduct R&D which is geared to the needs of business and industry and usually linked to the structure and development of the regional economy. Future development targets are to integrate R&D into education, to strengthen the basic prerequisites and funding base for R&D and to promote networking between polytechnics, universities and research institutes.

Polytechnic R&D has expanded in recent years. The most important source of funding for polytechnic R&D is the EU Structural Funds.

The two main missions for universities are scientific research and research-based higher education, including postgraduate education. Doctoral degrees are only awarded by universities.

About half of university research funding comes directly from the state budget and is intended to safeguard infrastructure and other basic prerequisites for research. Universities allocate these resources independently. The main sources of external funding are the Academy of Finland and Tekes, while EU sources account for about 6%. The total university research expenditure was about 900 million euros in 2006.

Developing postgraduate education and research careers

Postgraduate education provided by universities was enhanced in 1995 with the establishment of a graduate school system. Its foremost aims are to assure the quality of postgraduate education, shorten the time spent on writing doctoral dissertations and increase international co-operation.

The mission of graduate schools is to provide systematic instruction and guidance for doctoral students, who study full-time on a salary, aiming to finish their doctoral dissertations within four years. There are 119 graduate schools with about 4,000 full-time postgraduate students working on their doctoral dissertations. About 30% of graduate school students complete their doctorates before the age of 30.

Finland is currently developing a four-tier research career system in order to make postdoctoral research careers more predictable and attractive. The system will make it possible to enter and advance in a professional research career, while also ensuring an adequate supply of competent researchers to cover the needs of the research and innovation system and society as a whole.

Equality in the research sector

Finland has actively promoted equality in all sectors of society. Women have been in the majority among university students since the 1970s. The number of female doctors has been increasing steadily. During the past ten years, the number of women with doctoral degrees has more than tripled.

Finland is one of the pioneer countries in the development of women's research careers within the European Union. The number of women working in the R&D sector has risen steadily. In 2006, women accounted for about one third of all research personnel and about half of university research staff. The proportion of female professors in Finland is among the highest in the European Union.

Library and information services in support of research

The Ministry of Education promotes support services in scientific research by funding the development and maintenance of research equipment, information networks, scientific computing, and the operations of scientific libraries. The Centre for Scientific Computing (CSC) is a state-owned IT centre for science and administered by the Ministry of Education.

The scientific libraries, i.e. university libraries, polytechnic libraries and specialist libraries, support higher education, studies and research.

R&D funding in the 2007 State Budget

	R&D funding	Share of total research funding
	€ million	%
Universities	446.4	25.8
Academy of Finland	275.8	15.9
Tekes	504.3	29.2
State research institutes	282.0	16.3
University central hospitals	48.7	2.8
Other research funding	172.7	10.0
Total	1,730.0	100.0

Source: Statistics Finland, Science and Technology Statistics



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