Higher education in the United Kingdom

IHEM Country report

Liudvika Leišytė
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Center for Higher Education Policy Studies (CHEPS
Universiteit Twente
Postbus 217
7500 AE ENSCHEDE
The Netherlands

T +31 53 489 3263
F +31 53 434 0392
E secr@cheps.utwente.nl
W www.utwente.nl/cheps

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The CHEPS International Higher Education Monitor

The CHEPS International Higher Education Monitor (IHEM) is an ongoing research project, commissioned by the Dutch Ministry of Education, Culture and Science. The project aims to provide higher education policy makers with relevant and up-to-date information on national higher education systems and policy changes. This information is presented through in-depth country reports, comparative thematic reports, annual update reports, statistical bulletins and a statistical data-base. The core countries for which this information is collected and presented include Australia, Austria, Finland, Flanders (Belgium), France, Germany, the Netherlands, Portugal, Sweden and the United Kingdom.

Country reports

Increasingly, governments take international trends into account when developing national higher education policies. Continuing European integration, the increasing mobility of people within the European Union, as well as supra-national initiatives deployed at the European level with respect to higher education (e.g. the Leonardo and Socrates programs) necessitate such an orientation. Policy makers therefore need to have access to adequate information on higher education structures, trends and issues in Europe as well as other countries. New technologies have opened access for everyone to vast amounts of facts and figures on higher education in almost every country. Although these data are indispensable for higher education policy makers and analysts, they often do not provide much in the way of usable information. What is lacking is a frame of reference to properly interpret the data.

Such a framework is offered by the CHEPS International Higher Education Monitor country reports. These reports have a clear structure, describing the higher education infrastructure and the research infrastructure. In addition to an in-depth description of the institutional fabric of the higher education system, the reports address issues of finance, governance and quality in higher education. The country reports provide the frame of reference for the interpretation of policy initiatives, trend-analyses and cross-country comparisons.

A wide scope of sources are used for these country reports including national statistics, (inter)national journals and magazines, national policy documents, research papers, and international documents and databases.

To keep track of the latest (policy) changes in higher education annual update reports are published.
These publications and other information on the IHEM can be found on:

http://www.utwente.nl/cheps/higher_education_monitor

Abbreviations

CAT	Credit Accumulation and Transfer Scheme
CVCP	Committee of Vice Chancellors and Principals
DENI	Department of Education Northern Ireland
DFES	Department for Education and Skills
DIUS	Department for Innovation, Universities and Skills
FEFC	Further education Funding Council
FHEQ	Framework for Higher Education Qualifications
FTE	Full-time equivalent
GCE	General Certificate of Education
GCSE	General Certificate of Secondary Education
HEFC	Higher Education Funding Council
HEFCE	Higher Education Funding Council for England
HEI	Higher education institution
HEQC	Higher Education Quality Council
HESA	Higher Education Statistics Agency
HND	Higher National Diploma
ISC	Independent Shcools Council
LEA	Local Educational Authority
OFFA	Office of Fair Access
OST	Office of Science and Technology
QAA	Quality Assurance Agency
QR	Quality Related
RAE	Research Assessment Exercise
RDP	Research Degree Programme
SEETLLD	Scottish Executive Enterprise, Transport and Lifelong Learning Department
SSG	Special Support Grant
UCAS	Universities & Colleges Admissions Service
VCE	Vocational Certificate of Education

1. INTRODUCTION

This report deals with the current state of affairs in Higher Education in the United Kingdom. The United Kingdom is a unitary state but has seen some devolution in the past years. There are therefore sometimes differences between England, Scotland, Wales, and Northern Ireland in their Higher Education policies. When thinking about these differences it is important to keep in mind that 80% of the UK population lives in England, it is for that reason that this report deals first and foremost with the situation in England. When, however, important differences occur in the other countries of the UK, these will be dealt with.
The education system in the United Kingdom is made up of primary education, secondary education, further education and higher education. Compulsory education starts at the age of five. At that age, about half the children have already been enrolled in some form of pre-school education. Primary education lasts six years, usually divided into infants (5-7 years) and juniors (8-10 years). Pupils enrol in secondary education when they are 11 years old. In Scotland, however, primary education begins at the age of 5, and lasts 7 years (up to the age of 12). Secondary education consists of a variety of systems, provided by local education authorities (LEAs). Compulsory education ends at the age of 16 with the General Certificate of Secondary Education (GCSE), but most secondary schools provide some form of advanced education leading to General Certificate of Education (GCE) Advanced (A) levels (Brennan & Shah, 1993). After the age of 16, pupils can continue with Higher Education (Brennan and Shah 1993; Eurybase 2005).

1.1 Secondary education

Secondary education refers to school-based education for pupils between the ages of (approximately) 11 and 18. Only the first five years of secondary education (until approximately 16 years of age) are compulsory. In England and Wales, full-time post-compulsory education is offered in the *sixth form* of many secondary schools, In Northern Ireland, it is largely grammar schools which currently offer post-compulsory education to students, alongside further education colleges. Post-compulsory education is also provided in sixth-form colleges, tertiary colleges and in further education colleges.
In the UK there is a private secondary education system alongside the public system. To complicate matters the private schools are called ‘public schools’ or ‘independent schools’; the publicly funded state schools are either ‘comprehensive schools’ or, fewer in numbers, ‘grammar schools’. The independent schools are expensive and are still quite often boarding schools. There is a strong debate in terms of equal opportunities of access to higher education. Numbers from 2003/4 show that 45% of the entrants to Cambridge and Oxford were from independent schools, where less then 7% of all the students in Britain have attended an independent school (HESA 2005; Independent Schools Council 2007).

1.1.1 State schools

Most secondary schools in England Wales and Northern Ireland are non-selective and accept pupils regardless of ability. These are known as comprehensive schools. In some areas there are also schools which select all their pupils on ability. These designated selective schools are commonly known as grammar schools. In addition to this there exists a ‘Specialist Schools

Programme' that allows a grant-maintained secondary schools to specialise in a particular area of the curriculum such as modern foreign languages, arts, sports, or sciences and technology, while still delivering the full National Curriculum. Specialist secondary schools receive additional funding from the Government and sponsors in industry who are represented on the school governing body. The specialist schools programme applies to England only and the schools are spread across all parts of the country, including rural, inner city and urban areas.
In Northern Ireland, with the exception of some areas, there is a selective system of secondary education, with pupils transferring to grammar schools or secondary schools at the age of 11. It is largely but not exclusively the grammar school sector, which offers post-compulsory (16+) education to students alongside further education colleges. Admission to grammar schools is generally on the basis of tests, which are centrally administered by the Department of Education for Northern Ireland (DENI).
Secondary education in Scotland involves pupils between the ages of 12 and 18. Education is compulsory up to the age of 16, and a more specialised curriculum is offered for 2 years beyond compulsory education (up to the age of 18). All secondary schools offer a general education and, alongside it, some more vocationally oriented courses, for pupils from the 3rd year of secondary education onwards (Eurydice 2005).

1.1.2 Independent schools

About 615,000 children attend some 2,500 schools that are independent of local or central government control. They represent 7% of the school age population. The schools are sometimes called fee-paying schools because they charge parents fees.
The wide choice of independent schools throughout the country includes day and boarding schools (and in many cases a mixture of day and boarding pupils); single-sex schools and coeducational ones; schools for boys and girls of every age and ability from 2 to 19.
The fees for private schools vary considerably, between different school types and within each type of school. For senior schools (age 11/13-18), the average term fee at an ISC school for 2006/2007 was £3,391 per term.
However, the elite schools charge much more than that, for example Harrow School charges £8,275, Winchester College £8,327 and St Paul's School £7,227 per pupil per term.
Many independent senior schools set some form of entrance test. The difficulty of these tests and the standard required for admission vary and will be related to the type of school. Most urban day schools, for example, set their own entrance examinations (usually in January) and require a high standard of performance. This reflects the education they offer: making high demands on very able children. Some of the independent schools are very selective and only admit students who demonstrate very high performance in the Common Entrance examinations. Many others, however, take a much wider range of ability, some after an interview and simple test.

1.2 Further education

After secondary education there are several alternatives for direct access to higher education usually referred to as further education. The types of institutions that provide further

education in England and Wales include Further Education Colleges, sixth-form colleges and adult education centres. In Northern Ireland, only Further Education Colleges exist.

1.2.1 Further Education Colleges

There are no specific branches of study in further education. Students may take a combination of general and/or vocational courses. However, traditionally Further Education Colleges offered vocational education and training while sixth-form colleges provided largely general education.

The Further Education Colleges are largely the product of amalgamations of the earlier teacher-training colleges with other units. These institutions tend to have a vocational emphasis in their programs. While many are predominantly involved in teacher training, among them they offer a wide variety of fields, including the arts, drama, and technology. Colleges may offer courses leading to degrees, postgraduate qualifications, professional and vocational qualifications and higher education diplomas, but the degree itself must be conferred by university or other authorised body.

Further Education Colleges provide full or part-time education and training for students over compulsory school-leaving age (16). Further Education Colleges traditionally offered courses of a vocational nature, but many now also offer academic courses. Most Further Education Colleges are specialised in engineering, agriculture, fine arts or teacher training, but there are also some which are specialised in business, architecture, and other fields of study. In Northern Ireland, they also offer part-time recreational courses for adults. All courses lead to nationally recognised qualifications of a number of national examining and awarding bodies. The subjects of study and the number of hours involved vary between the courses.

Further Education Colleges can apply for the authority to award its own degrees but must be able to demonstrate a good record of running degree courses validated by other universities. They can apply for university status but must satisfy a number of criteria, including the power to award its own first degrees and higher degrees. The Further and Higher Education Act 1992 allows for the transfer of further education institutions into the higher education sector, if the full-time enrolment number of the institution concerned for courses of higher education exceeds 55 per cent of its total full-time equivalent enrolment number

1.2.2 Sixth form colleges

Exclusive to England and Wales, sixth-form colleges were governed by Schools Regulations and offered full-time academic courses to students over compulsory school-leaving age. However, the Further and Higher Education Act 1992 has brought them into the Further Education sector and they may now offer the full range of further education courses, both full- and part-time. There are no formal qualifications required for admission to an institution of Further Education or to an adult education centre, although individual courses may have specific requirements. Many colleges have introduced access courses aimed specifically at people with no academic qualifications.

1.2.3 Open College and adult education

The Open College, which began offering courses in 1987, is an independent institution, but was supported initially by governmental funding. It aims to provide open learning course on vocational subjects at a variety of levels. The courses do not necessarily lead to a recognised national qualification, and are mainly aimed at updating people's knowledge or skills. The Open Tech Programme was set up by the Manpower Services Commission, and aimed at developing training by open access methods within firms or by collaborations between firms, colleges and other agencies. The Open College of Arts was established in 1987 to enable people to study the arts from home. It functions similarly to the Open University (see next section), but it receives no government funding (it depends on fees and donations).

Adult education is frequently defined as including higher education for adult students in universities and colleges. In this sense, all of the Open University's work would count as adult education, as would most part-time courses in universities and colleges. But there is also education that is specifically targeted at adults.

Adult education centres are under the control of the Local Educational Authorities (LEAs). The Education Reform Act 1988 permitted these authorities to set up schemes for the local management of these institutions, which resulted in the delegation of certain management functions to governing bodies. In adult education centres, the LEA delegates the day-to-day management of the institution to the principal or director. LEAs are encouraged to establish governing bodies in adult education centres and to delegate the management of the budget and staff, but are not obliged to do so. Adult education centres may be organised along departmental lines, similar to those of FEFC sector institutions. The centres usually have one administrative centre with teaching spread across a number of sites, some of which may be on school premises which remain open in the evening. These centres have a small number of full-time staff who co-ordinate the work of a large number of part-time staff. However, the organisation of adult education does vary between LEAs.

1.3 Certificates

Nationally recognised qualifications are taken by the majority of pupils at the end of the period of compulsory education, at the age 16. However, these qualifications may also be taken by students of any age, including adults, in further education institutions The examination most commonly taken is the General Certificate of Secondary Education (GCSE). Pupils who are not ready for the GCSE-level certificates may obtain an 'entry level' qualification.
The GCSE consists of a range of examinations in single subjects and there are no regulations governing the minimum or maximum number of subjects to be taken by a pupil at any one time. The grades are issued by external awarding bodies, which appoint the examiners and standardise the system of grading. A certificate is issued listing the grade which a candidate has achieved in each subject attempted. The results are reported on an eight-point scale: A*, A, B, C, D, E, F and G. Candidates who fail to reach the minimum standard for grade G are recorded as 'U' for 'unclassified' and do not receive a certificate. GCSEs in vocational subjects – e.g. in engineering, applied sciences, health and social care – are being introduced since September 2002

Pupils in post-compulsory upper secondary education may take a number of courses leading to nationally approved qualifications, including General Certificate of Education Advanced-level (GCE A-level) and GCE Advanced Subsidiary level (GCE AS level). GCE A/AS -levels are again single-subject examinations that are externally managed. GCE A/AS qualification passes are graded on a scale of A to E. The grade U denotes a fail. The Vocational Certificate of Education (VCE) (or Vocational A-level) is also offered and is intended to offer a comprehensive preparation for employment as well as a route to higher-level qualifications. This examination is graded in a similar way to A-levels, that is using an A-E scale.
The traditional qualification for entry to a university has been two or three GCE A-level passes as well as a minimum number of GCSE passes at grade C or above. However, a wide range of other qualifications is acceptable for entry as well as more specific requirements may apply in some schools.

2. THE HIGHER EDUCATION SYSTEM

2.1 Types of higher education institutions

There are 89 universities in the UK (including 72 in England, 13 in Scotland and two each in Wales and Northern Ireland). Universities in the UK have been established in four ‘waves’. The first universities were Cambridge and Oxford. In the nineteenth century the so called Redbrick universities followed, catering for a new market of students and employers that came into being as a consequence of the industrial revolution. The third wave of universities was established in the 1960s again to cater for a growing demand in society for higher education. The final universities are the former polytechnics that were given university status in 1992. The universities that were established in the first two waves were created by Royal Charter, the universities that were established later are based on Parliamentary Statute. Whatever the legal basis, each university is self-governing. Any amendment to institutional charters and statutes is made by the Crown acting through the Privy Council on the application of the universities themselves. Each university determines which degrees and other qualifications it will offer (UUK 2006).

The transition of the polytechnics to universities also meant the end of the binary system and the establishment of unified system of higher education. The changes of 1992 created a single system of higher education, with a unified funding structure and separate funding councils for England, Scotland, and Wales. With only one exception, the University of Buckingham, all universities are publicly funded institutions. The Further and Higher Education Act 1992 allows higher education institutions in England and Wales that satisfy prescribed criteria to apply for permission to include the word 'university' in their titles. All polytechnics were allowed to do so and only one (Anglia Polytechnic University) has chosen to retain the word 'polytechnic' in its title. The title 'polytechnic' will not be given to new institutions in the higher education sector in future. Although the UK has this unified structure, the university sector (and literature) still refers to a distinction of “old universities” and “new universities” in other words between traditional universities and former-polytechnics.

The “old universities” were all established as universities before 1992. In general terms, the “old universities” do not provide professional training, although they do provide a range of professionally accredited degree courses including engineering, accountancy, teacher training, librarianship and information science and medical studies. Qualifications specific to a profession and required for its practice are more often obtained through successfully completing examinations set or accredited by professional bodies, such as the Chartered Institute of Public Finance and Accountancy and the Council of Legal Education.

Most of the “new universities” were previously polytechnics. Polytechnics were originally set up by charitable endowment to enable working-class men and women to advance their general knowledge and industrial skills on a part-time or full-time basis. Their role changed with the 1966 White Paper, "A Plan for the Polytechnics and Other Colleges” (GB. Parliament House of Commons, 1966), which described the polytechnics as regional centres of higher education linking industry with business. Since the Education Reform Act 1988, which removed polytechnics and colleges and higher education institutions in England from local education authority control, these have also been autonomous institutions. Permission to use the word 'university' has also been granted to some other higher education institutions.

Next to this traditional higher education system, the Open University was set up in 1969 and is now the major provider of part-time degrees in the United Kingdom. It is an autonomous

institution, and is able to award degrees like other universities. Unlike other universities, however, it is financed through the Department of Education and Science rather than through the Higher Education Funding Council (HEFC).
Three main types of programmes are offered at the Open University: undergraduate courses, postgraduate courses, and continuing education and "post-experience" courses. The third type of course is open for students who do not wish to register as an undergraduate, and these programmes may include courses taken from the undergraduate programme or specially developed short courses on social or community issues. In addition to these three main types of education, some Diploma courses are offered through the Open University.
The bulk of the teaching at the Open University is done through distance learning. Television and radio broadcasts are used, as well as audio cassettes, etc. Many courses require students to participate in a residential summer school, which takes place at selected universities during the summer holidays and last for a week. Regular tutorials are available at local study centres.

2.2 Structure of university education

All institutions must offer a wide range of courses. Universities must have a sufficient distribution of students across five of the eleven curriculum areas listed by the HEFCs and accepted by the Department of Education Northern Ireland. Institutions that were originally set up as, for example, institutes of technology but which subsequently received a university charter tend to retain their technological specialty. Courses available are listed in a variety of directories of Universities and Colleges Admissions Service, Universities UK, the British Council.
Each institution determines the number of hours of study required for every subject. Students attend more classes for some subjects, such as science-based disciplines; others may require students to spend more time in private study.
The academic year has traditionally been divided into three terms; however, modular systems of study based on two semesters a year are becoming more common. Many institutions operate Credit Accumulation and Transfer Schemes (CATs), the aim of which is to help students create a personal programme of studies to complete a degree. Within CATs, credit may be given for previous study or work experience. CATs also facilitate degree completion by students who are unable to undertake one continuous period of study. Institutions may also form local consortia to operate a common CAT scheme, thus enabling students, where appropriate, to follow certain courses at institutions other than their own but for which they will be given credit towards their degree.
Institutions may also choose to offer courses that are specifically intended to meet the needs of the local community. Thus they may offer part-time courses providing professional updating, which people attend on day release from work or attend in the evening, or leisure courses on matters of potential interest, such as local history or geography, or language or literature classes.

2.3 Diplomas and degrees awarded

According to the Framework for Higher Education Qualifications (FHEQ) the universities in

England, Wales and Northern Ireland offer the following degrees at the following levels:

- Certificate level
  - Certificates of higher education
- Intermediate level
  - Foundation degrees,
  - ordinary bachelor's degrees or first degrees,
  - higher national diplomas,
  - diplomas of higher education
- Honours level
  - Bachelor's degrees with honours,
  - graduate certificates and diplomas
- Masters level
  - Master's degrees,
  - postgraduate certificates and diplomas
- Doctoral level
  - Doctorates (QAA 2001)

2.3.1 Undergraduate programmes

Certificates of Higher Education

Higher Education Certificates are aimed at those who wish to study part-time at a Higher Education level without the long term commitment to a part-time Degree. They are offered at Level 1 (equivalent to the first year of undergraduate study) and there are no entry-requirements - all are welcome to apply. To gain a Certificate, students need 120 credits taken in subjects determined by the universities.

Higher National Diplomas

Higher National Diplomas (HNDs) provide an alternative route for students wishing to enter higher education, without studying for a Bachelors degree. HNDs usually last two years, and tend to have a more explicitly vocational focus. Successful completion of an HND can lead to second year entry to a related degree. For some subjects, it's possible to do a one-year top up for an ordinary degree, and further part-time study to convert that to an honours degree.

Diplomas of Higher Education

A Diploma of Higher Education (DipHe) is similar to an HND, but stands as an accredited professional qualification, providing access into professions such as nursing and social work (HERO 2007). The Diploma in Higher Education was created in 1972 as a two-year course at universities, polytechnics and colleges the DipHE was to be "no less intellectually demanding" than the first two years of a degree course. The 1972 White Paper "Education: A Framework for Expansion" identified a gap in routes for school and college-leavers - the choice only of entering employment and studying part-time, or committing to a course lasting at least three years. Only a limited range of two-year courses was available, all in specific vocational areas; not much has changed since. The 1972 White Paper saw the new courses as a "critical element" in achieving greater flexibility in higher education.

Foundation degrees

Foundation degrees were introduced in September 2001 following proposals announced by the Secretary of State in February 2000.The foundation degrees are in a sense not unlike the diplomas in higher education. The courses aim to fill an alleged gap in provision, as were those of 1972. Foundation degrees aim to meet the shortage of people with technician-level qualifications and to develop "the right blend" of skills that employers need. There is visible concern that the new courses will be accepted in their own right, not, as the White Paper put it, "a cheap substitute" for existing courses. There are, however, differences between the proposals. The foundation degrees are explicitly concerned with vocational aims. Therefore, the degrees have been developed by partnerships of higher education institutions with degree-awarding powers, employers, and further education colleges, supported by the Higher Education Funding Council for England, the National Assembly for Wales, and, in Northern Ireland, the Department for Education and Learning. They are intended to help education providers to address the shortage of intermediate level skills and to widen participation in higher education and stimulate lifelong learning. They are available in employment-related subject areas such as Internet computing; learning support; and hospitality, leisure and tourism. Foundation degrees are intended to be completed in two years or an equivalent period part-time, and are designed to offer opportunities to progress to a first degree.

In the 2003 entry cycle Universities & Colleges Admissions Service (UCAS) received a total of 12,391 applications to over 700 separate foundation degree courses, resulting in 5,597 accepted applicants to foundation degree courses. Overall, 1.5% of applicants accepted through UCAS were accepted on to foundation degrees. The foundation degree accepted applicants were more likely to be male and from Black ethnic origin. The age profile of foundation degree accepted applicants can be seen to be generally older than either for degree or HND accepted applicants. Mature accepted applicants made up 42.0% of foundation degree accepts, compared with 21.7% of degree (excluding first degrees) accepts (UCAS 2004).

First degrees

First degrees include traditional first degrees (the most common are Bachelor of Arts and Bachelor of Science), first degrees with Qualified Teacher Status / registration with the General Teaching Council for Scotland, enhanced first degrees and first degrees obtained concurrently with a diploma.

The first degrees are mainly three-year programs. Exceptions to the three-year programs are, for example, language courses (with an extra year spent abroad), extended engineering courses, medicine, architecture, the initial teacher training honours B.Ed., and programs with industrial training (the so-called “sandwich courses”). Besides, many degrees in the University of Keele, and most degree programs in Scottish universities, also take four years.

Undergraduate degree programs can be completed at different levels, the lowest level being the bachelor pass degree and the highest level being the bachelor first-class honours degree. Bachelor’s honours degrees can be divided into three categories: first class honours, second-class honours, and third class honours. Second-class degrees are further divided into two divisions, upper and lower, also known as 2i and 2ii.The difference between an honours degree and an ordinary degree is the study load: for an ordinary degree fewer credit points are

obliged.
First degrees have the title of Bachelor of Science (B.Sc.) or Bachelor of Arts (BA); special qualifications are sometimes awarded for bachelor's degrees in engineering (B.Eng.) and education (B.Ed.). Upon completion of an undergraduate program, three types of programs with different qualifications can be followed: postgraduate diplomas and certificates, master's degrees, and doctorate degrees.

2.3.2 Post graduate programmes

Post-graduate degrees may be obtained by successful completion of taught courses or individual research or a combination of these. They are awarded at two levels, Master's Degrees and Doctorates. Universities may also award honorary higher degrees (often doctorates) to persons of distinction in academic and public life or to people who have made an outstanding contribution to the university or the local or national community. In addition to the Master's and Doctorate degrees, students may obtain a postgraduate certificate or postgraduate diploma.

Master degrees
A master's degree is conferred after one or two years' study following the bachelor's degree. Master's degrees usually require a minimum of one year full-time study (more commonly, two years), or the part-time equivalent. Exceptions are Oxford and Cambridge Universities, where the degree of Master of Arts (MA) is an indication of 'maturity' and not of additional academic achievement. Graduates of these universities (that is, holders of the degree of Bachelor of Arts (BA) may apply ('supplicate') for the degree of Master of Arts (MA) on payment of the appropriate fee, without undertaking any further study or examination.

Common degrees obtained for taught or research Master's (or a combination of both) are: Master of Arts (MA), Master of Science (MSc), Master of Business Administration (MBA), Master of Education (MEd), Master of Social Work (MSW), Master of Musical Arts (AMusM), Master of Medical Sciences (MMedSci) and Master of Philosophy (MPhil).

Doctoral degrees
Doctoral degrees are postgraduate degrees awarded for an extended essay, known as a thesis. The most important criteria are that a thesis is based on original research and thought, that it is clearly presented and that it adds to mankind's pool of knowledge. Many students study for the degree on a part-time basis. The degree awarded is normally that of Doctor of Philosophy (PhD or, at a few universities, DPhil), regardless of the field of study of the research, except for a few specialised fields as in the case of the degree of Doctor of Musical Arts (AMusD). Students are funded for up to three years to pursue full-time research for a doctorate.

Senior doctorates may also be awarded to established scholars, often in recognition of a substantial body of published work. The titles of these senior doctorates normally reflect the field of the holder's interest more closely than do PhDs; thus titles such as Doctor of Letters (DLitt) and Doctor of Science (DSc) are awarded.

Other post graduate programmes; postgraduate certificate or postgraduate diploma
These programmes are generally open to students who have a degree in one discipline and are seeking to broaden their academic background in an additional one. In this sense, the holders of these Postgraduate credentials are viewed as having undergraduate school credentials in the additional discipline. The length of study is usually one year.

2.4 Admission

2.4.1 Entrance qualifications

The traditional qualification for entry to degree study has been two or three General Certificate of Education Advanced Level (GCE A-level) passes as well as a minimum number of General Certificate of Secondary Education (GCSE) passes at grade C or above . These remain the most common form of entry qualification held by full-time undergraduate students. However, a wide range of other qualifications is acceptable for entry. This includes Advanced Vocational Certificate of Education (VCE A level) qualifications, Edexcel BTEC National Qualifications, and the International Baccalaureate. Many courses require some or all of the qualifications for entry to be in specific subjects or in a specific range of subjects. In practice, because entry is competitive, most institutions require levels of qualifications considerably above the minimum. These requirements may be expressed in the number of passes or in the grades to be obtained. For example, university departments of medicine usually require three A-level passes at grade A or two A-level passes at grade A, plus one pass at grade B, in specific subjects.
A new 'UCAS Tariff' has been developed to provide a points score system for reporting achievement for entry to higher education. The new system is being introduced from 2002. It takes provision for a wide range of qualifications including Scottish qualifications.
Most institutions also welcome applications from mature candidates who have had appropriate experience but may lack formal qualifications. Increasing numbers of universities offer courses on a modular and part-time basis and many institutions now also give credit for prior study and informal learning acquired through work or other experiences (Accreditation of Prior Learning (APL) or Accreditation of Prior Experiential Learning (APEL).
Access courses can also provide an entry point to higher education. These are courses offered largely by further education institutions and aim to prepare students without academic qualifications for entry to higher education. The courses are aimed mainly at mature students and are designed and taught to meet their needs. Such courses can, in certain circumstances, provide guaranteed entry to specific undergraduate courses.
The proportion of students admitted with non-traditional qualifications varies from one percent to over 70 percent, depending on the institution. There are specific requirements for admission to courses of initial teacher training. Students on higher education courses are expected to be able to follow lectures in English and to present their work and examinations in correct English. The University of Wales and some other institutions in Wales have provision for students to follow some courses through the medium of the Welsh language and to present work and take examinations in that language.

If the number of candidates that meets the minimum demands exceeds the number of places available, which happens in many disciplines, institutions may apply additional selection criteria, like:

- exam results in addition to the minimum standards;
- references of teachers;
- personal arguments and motivation;
- interviews (some universities).

For overseas students, the situation is different, since often overseas school leaving certificates do not meet the entry requirements of some British institutions. The National Academic Recognition Information Centre (NARIC) checks, whether overseas student-qualifications meet the British entry requirements. In addition, students are expected to be able to follow lectures in English and to present their work and examinations in correct English. The University of Wales and some other institutions in Wales make provision for students to follow some courses through the medium of the Welsh language and to present work and take examinations in that language.

2.4.2 Admission procedure and requirements

Those wishing to enter higher education have to fill out an application form a year before entrance (in October) (Eurydice 2005). They can choose up to six courses (only four for medicine, dentistry, veterinary medicine or veterinary science courses). No preferences can be given. UCAS collects all application forms and sends them to the institutions mentioned at the form. The institutions assess the applications in relation to their own admission policy. In April the aspirant-students are reported by UCAS on the decisions of the institutions and which of their applications have been approved. In this stage students did not have their final exams yet and therefore the offer of the institutions is conditional, which means that the offer stands under the condition that the examination results of the candidate meet the demands of the institution. When students receive the results of the admission decisions of the institutions, they have to react formally to the offered places by choosing maximum 2 programmes. Usually they choose one programme for that they have a strong preference and a second one for the case they do not meet the demands of this programme preferred. This implies that the student cannot enrol another institution through the UCAS.
The UCAS provides the institutions with the choices of the students. After the examination results are known, UCAS will report them to the universities. If an aspirant-student meets the required demands, the institution is obliged to confirm his or her study place (Confirmation). If a candidate does not meet the demands, the institution may after all accept the student if the institution has places available (Eurydice 2005). Those who have been rejected for both programmes of their choice but meet the minimum criteria to be admitted to higher education can compete for the study places still available through the so-called Clearing Scheme, which starts in September. Candidates who sent in their application form in a later stage, may also be admitted to this clearing process. During this process the places still vacant are published by UCAS after which the students and institutions can contact each other directly. Practically all

candidates have to compete for a study place through the UCAS procedure. Since the institutions do not have to explain the reasons for rejection or admission of individual students, it seems useless to appeal against a negative admission decision.

2.5 Access

The recent debates surrounding British secondary education and access to universities have focussed on two issues. First, on the access to universities of those pupils in state schools compared to the pupils in public schools and on the related question whether or not this system further reinforces the difficulties of disadvantaged children to enter universities. Second, there has been a long discussion about the consequences of the top-up fees (up to £3000) for the students coming from the lower-income families as of academic year 2006/2007.

2.5.1 Equity issues

Evidence shows that students from independent schools are considerably more likely to win places at the top 13 universities than their state school counterparts[1]. Independent schools achieve proportionately better A level results. The 7% of students at independent schools account for a third of the top grades at A level. But the benchmark figures show that even when the difference in grades is taken into account there is a bias against state schools students and those from poorer areas. Oxbridge takes roughly half of its pupils from state schools, when state schools provide about two-thirds of top A level grades. Children from independent schools account for 39% of the entry to the top 13 universities, when on their benchmark figure they should win 28% of places.

About 600,000 people leave the education system every year. Of the 42,000 who leave independent schools, more than 11,000 go to a top 13 university. By benchmark results, only 7,800 should. But of 300,000 children of the less affluent social classes, only 3,500 get in to a top 13 university. By the benchmark, 4,600 should. Students are about 25 times more likely to get into a top 13 university if they go to public school than if they come from a lower social class. On the benchmark figure, that is about double what it should be (Theisens 2003). Socio-economic class is thus another factor that influences pupils' access to higher education. Pupils among the less affluent social classes account for 50% of the population but only 13% of entry to the top universities. Of the 200,000 pupils who live in less affluent areas, 1,700 get in to a top 13 university compared to 2,300 that should on the benchmark figure.

At schools with a tradition of top university entrance, pupils will be encouraged to apply for the right course and university to maximise their chances of getting in and their predicted A level grades become a reliable source on which universities depend. Applicants from many comprehensive schools often do not know or think they are top university material and do not

[1] Based on Financial Times league table for universities (2001) this includes: Cambridge, Oxford, York, Warwick, Bristol, Nottingham, St Andrews, Birmingham, Edinburgh, and Durham, and three London colleges, Imperial, University (UCL) and the London School of Economics.

have access to the same information and contacts with these institutions. On the other hand, more and more pupils at state schools are receiving private tutoring, thus blending the difference between private and state school.
In practice, once a student enters into a university, the type of secondary schooling is not really important. A study that followed the education and career paths of academically able pupils over the past fifteen years has found that "the overwhelming majority" achieved academic success, irrespective of whether they were educated at a comprehensive school, a grammar school or in the independent sector. Academic success seemed to depend more on the level to which their parents were educated than on the type of school attended (Whitty, Power et al. 2002).

2.5.2 Possible consequences of the top-up fees

The variable tuition fees to start from 2006 following the Higher Education Act of 2004 have been highly debated both within the academic community as well as among the “consumers”, i.e. by students and their parents. One of the concerns has been the consequences of the top-up fees for access to higher education to the students from the disadvantaged family backgrounds. Here the role of the Office of Fair Access (OFFA) has been crucial as it was established by the government to ensure that each higher education institution signs the access agreements according to which they invest some of their additional income from fees into attracting applications from students from low income groups – through bursary and other financial support and outreach work. Universities in their access agreements showed their predictions of financial support for 2006 and 2010. For 2010, for example, universities decided to use the funds gained from the variable tuition fees for student bursaries to a different extent, that ranges from 75% of income from additional fees spent on access in the case of Central Lancashire university to 10% in the case of Leeds Metropolitan university. In average, 25% of income gained from top-up fees was directed to enhance access (The Times Higher 2005).
In its yearly report 2005/2006, the OFFA stated that in 31 March 2006 there were 197 access agreements comprising 122 higher education institutions (HEIs), which means that all HEIs with full-time undergraduate students have submitted access agreements. 91% of HEIs have agreed a maximum fee limit for 2006-2007, that is £3,000 and 86% of HEI agreements have opted for a maximum fee limit (OFFA 2006). Since the establishment of the OFFA, the debates in UK started concerning “good” and “bad” institutions in terms of promoting access.

2.5.3 Policy developments with respect to access

Widening access and improving participation in higher education are one of the main governmental strategic aims in the UK. The Higher Education Act 2004 introduced initiatives to help students form poorer backgrounds to access higher education (Eurydice 2005). These include the means-tested financial aid for students and the creation of the Office for Fair Access to improve access to university for people for under-represented groups. The rationale for the Act came from the review of admissions practices (2003) and the White Paper (2003) on widening participation in higher education.

The key principles for the admissions systems were:

- be transparent
- enable institutions to select students who are able to complete the course as judged by their achievements and their potential
- strive to use assessment methods that are reliable and valid
- seek to minimise barriers for applicants
- be professional in every respect and underpinned by appropriate institutional structures and processes.

The Schwartz Review also recommended that a central source of expertise and advice on admissions be established, and that an implementation group be set up to explore post-qualification applications (Schwartz 2004). The White Paper "Widening participation in higher education" (2003) indicated four areas of concern: attainment, aspiration, application and admissions. The focus on standards and achievement at all ages has proven worthwhile as the programmes targeting early years, raising attainment in primary and secondary schools as well as creating new opportunities in 14-19 education proved useful. Standards have risen and more pupils from all socio-economic groups are reaching higher thresholds of achievement (DfES 2006) Raising aspirations was facilitated by the Aimhigher national programme working in disadvantaged areas. The programme brought together universities, colleges and schools to raise the attainment level of young people. The evaluation of the programme showed positive results, although there is still HEFCE Review's opinion that there should be more targeted activities on those from low socio-economic groups. The third and fourth areas of improving application and admissions have been facilitated by the establishment of the OFFA[2]. OFFA prepared its strategic plan 2005-2010 which lays down three core aims.

- To support and encourage improvements in participation rates in higher education from low income and other under-represented groups.
- To reduce as far as practicable the barriers to higher education for students from low income and other under-represented groups by ensuring that institutions continue to invest in bursaries and outreach.
- To support and encourage equality of opportunity through the provision of clear and accessible financial information for students, their parents and their advisers. (OFFA, December 2005)

In order to ensure that the introduction of higher tuition fees in 2006-07 does not have a detrimental effect on widening participation and that institutions are explicitly committed to increasing the participation rates of under-represented groups, institutions have been required

[2] Though there is a central agency co-ordinating the admission procedures for almost all full-time university programmes (the Universities and Colleges Admission Services, UCAS), the universities themselves are responsible for the selection of students. They decide on the criteria used, which may differ from department to department. Universities are not obliged to explain the reasons for admission or rejection. The admissions policies and procedures of universities are outside the remit of the access agreement of OFFA.

now to submit access agreements to OFFA for approval. These agreements show that universities will invest some of their additional income from fees into attracting applications from students form low income groups through bursary and other financial support and outreach work. From the first results it is seen that in 2006/07 about 25% of the additional income raised from the variable tuition fees will go to investment in financial support for students from low income and under-represented groups (DfES 2006). Another recent initiative to facilitate the admissions process was the establishment of a steering group for Supporting Professionalism in Admissions (SPA) for universities in 2006. Its aim is to act as a source of expertise and advice on admissions for UK institutions. Initially, this is a two year programme that aims to enhance good practice in admissions, student recruitment and widening participation across the UK higher education sector.

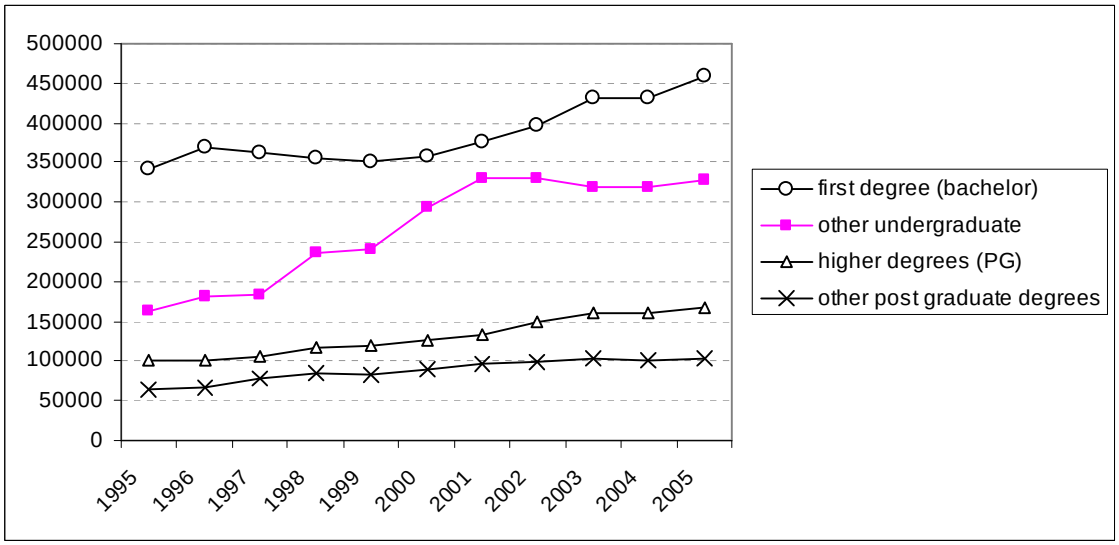
2.5.4 Access in Scottish, Welsh and Northern Irish Higher Education.

In Northern Ireland, access provision started in 1973 with the introduction of a Certificate in Foundation Studies for Mature Students by the University of Ulster at Magee College (now the University of Ulster). Queens University Belfast first validated access courses at further education colleges in 1989. In 1992 new regulations were introduced which standardised course requirements and led to the award of a Certificate in Foundation Studies.
In 1989 Welsh higher education institutions in association with the Welsh Office established the Wales Access Unit (WAU) for provision of access programmes and establishment of Authorised Validating Agencies (AVAs) for quality assurance of access programmes in Wales. Many different types of education institutions (such as further education colleges, LEAs, many community and voluntary providers, some trade unions, employers, etc.) work together as part of an Access and Credit Consortia. In 1996-97 all access programmes became modular and credit-based.
Scottish access programmes developed separately from those of the rest of the UK. Two main types of access programme exist: 1) programmes provided by higher education institutions, and 2) programmes offered under the auspices of three consortia of education authorities. The first type is subject to internal quality assessment in line with the quality promotion arrangements of the UACE. Some access courses are offered as part of Special Entry Summer School, which is intended to support greater participation from lower social classes.
Programmes of the second type were established in 1988 (with funding from the Scottish Office Education and Industry Department) under the Scottish Wider Access Programme (SWAP). These programmes are based on SCOTVEC's National Certificate modules and are subject to SCOTVEC's quality assurance examinations.

2.6 Statsistics

Access to higher education has grown. The growth at the post graduate level was continuous. At the undergraduate level, there has been a strong growth in other undergraduate programmes and a stagnation in the first degree programmes during the late 1990s. This pattern reversed in the early years of the new millennium.

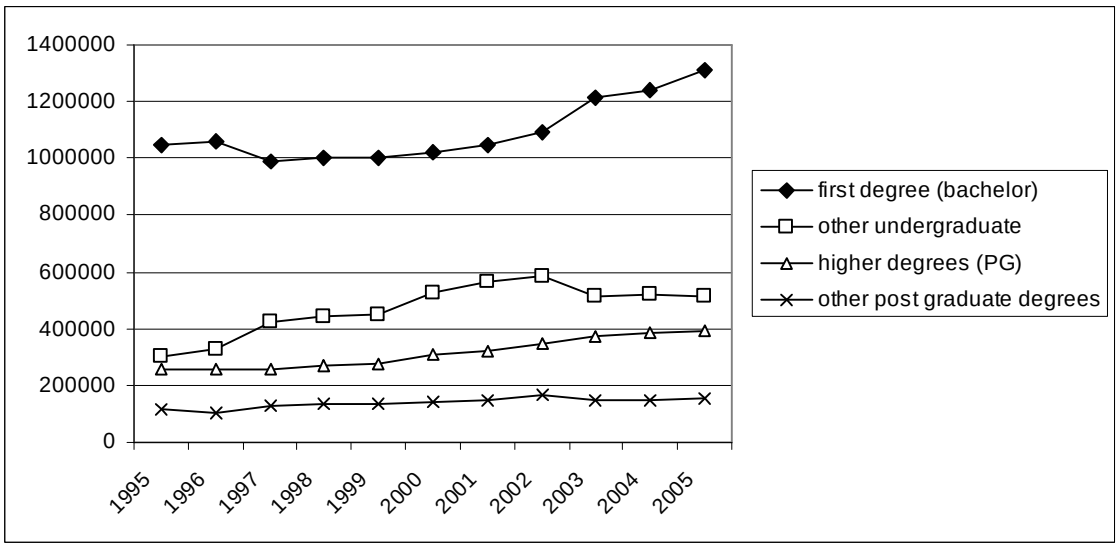
Figure 1: First year students in UK higher education



Source: IHEM 2007

The trends visible in the number of first year students can also be seen in the number of students enrolled: a general pattern of growth, with the typical switch of trends at the undergraduate level.

Figure 2: Number of students enrolled, by type of programme

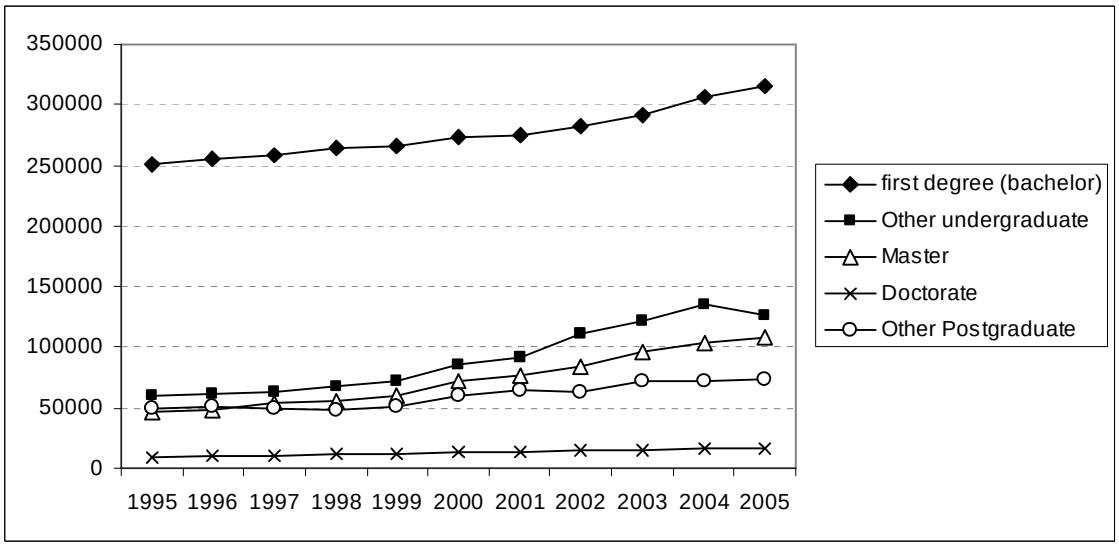


Source: IHEM 2007

The number of ethnic minority students has grown, both in absolute and relative numbers. In

2000, around 13% of all students belonged to a ethnic minority; in 2005 this was around 16%.

Figure 3: Graduates in UK higher education, by type of degree



Source: IHEM 2007

Older students are particularly strongly represented among part-time students: 63 per cent of first degree students studying part-time are over 30 and of those 30 and over, 55 per cent study part-time.

Continuing expansion of higher education in the longer term remains to be an important goal of the UK Government (Eurybase 2005). The governmental 2003 White Paper "The future of Higher Education" (DfES 2003) is very clear about what it wants to achieve in terms of student numbers: expand. It states that the economic case for expanding the provision of higher education is extremely strong. But that at the same time expansion must not lead to a compromise on quality and that the courses and patterns of study on offer really match the needs of the economy, as well as the demands of students themselves. The government has set an objective to increase participation in higher education towards 50 per cent of those aged 18–30 by the end of the decade.

The bulk of this expansion will be realised by creating new types of qualification, tailored to the needs of students and of the economy. The emphasis will be on the expansion of two-year work-focused foundation degrees, as they become the primary work-focused higher education qualification. In other words government strives to support employers to develop more foundation degrees focusing on the skills they really need; and to encourage students to take them by offering financial incentives for them; finally government has pledged to fund additional places for foundation degrees rather than traditional three-year honours degrees. On top of this, government will encourage other sorts of flexible provision, which meet the needs of an increasingly diverse student body, by improving more support for those doing part-time degrees, and supporting the development of flexible "2+" arrangements, credit transfer, and e-

learning.

2.7 Staff

Academic staff comprises the academic professionals who are responsible for planning, directing , and undertaking academic teaching and research within higher education institutions. Non-academic staff are those that do not have an academic employment function such as mangers, non-academic professionals, student welfare workers, secretaries, caretakers and cleaners.

The academic staff can be categorised by grade. The common grades identified are:

- Professor
- Senior lecturer and senior researcher
- Lecturer
- Researchers
- Other grades

The contracts of employment of academic staff may differ in terms of the type of activity the staff member is supposed to do:

- Teaching only,
- Teaching and research
- Research only
- Neither teaching and research (e.g. a vice chancellor)

Table 2-1: Fte academic staff by grade and academic employment function and gender, 2005

	Teaching only	Teaching & research	Research only	Neither teaching nor research	Female	Male	Total
All academic staff	**41575**	**84010**	**37310**	**1980**	**69125**	**95750**	**164875**
Professors	160	14885	280	185	2590	12915	**15505**
Senior lecturers & researchers	1540	25595	965	115	9455	18755	**28215**
Lecturers	13930	38435	1015	185	25065	28505	**53570**
Researchers	160	1160	33505	75	16140	18755	**34895**
Other grades	25785	3935	1545	1425	15875	16815	**32690**

Source: IHEM 2007

There have been significant changes and developments in higher education employment conditions in recent years. Central to this is the Framework Agreement on Pay Modernisation in Higher Education, that was agreed in 2004. The agreement provides a framework to modernise pay arrangements with the specific aim of promoting equality, transparency and harmonisation to ensure equal pay is delivered for work of equal value. Institutions negotiated grade structures for all staff locally against a nationally agreed pay spine. An increasing

number of institutions have therefore moved away from nationally recognised grade structures. The framework agreement was implemented by the sector August in 2006.

Rewarding and developing staff in HE

The pay levels and terms and conditions of employment for academic and other staff employed by HEIs are matters for the HEIs themselves to determine. However, they are expected to follow public sector pay policy by taking account of fairness, affordability, and the need to recruit, motivate and retain staff. Staff salaries are met through the block grant. As part of the 2002 Spending Review, the government announced additional resources (£167 million over two years from 2004-05) to help institutions recruit, retain and develop staff, as well as helping to modernise management processes. The additional resources supplement the £330 million provided since 2001-02. These funds were used in part to recruit and retain high quality academic staff in strategically important disciplines or areas, and to help modernise the management processes in the sector. Funding was released once HEIs had provided human resource strategies addressing certain priority areas. HEIs have been free to determine their own objectives, and specific targets are monitored through their annual operating statements.

3. RESEARCH INFRASTRUCTURE

3.1 Performers

The major sectors performing research in the UK are industry, higher education, government, research councils, and the private non-profit sector. Gross domestic expenditure on civil R&D in the UK amounted to 1.5% of GDP in 2004.
26.4 % of all civil R&D in the UK was carried out in higher education institutions, 60.2% by industry. Governmental R&D activites are concentrated mostly in the Department for Trade and Industry, Ministry of Agriculture and Ministry of Defence (Henkel and Kogan 2007).

Figure 4: Expenditure on civil R&D as a percentage of GDP

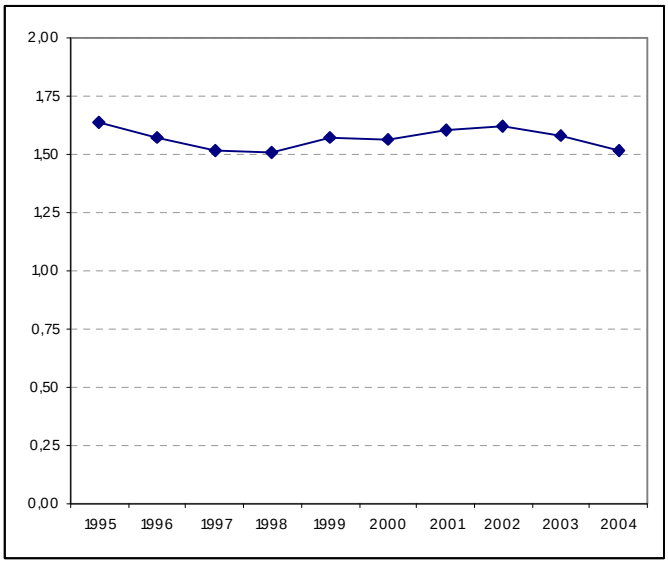
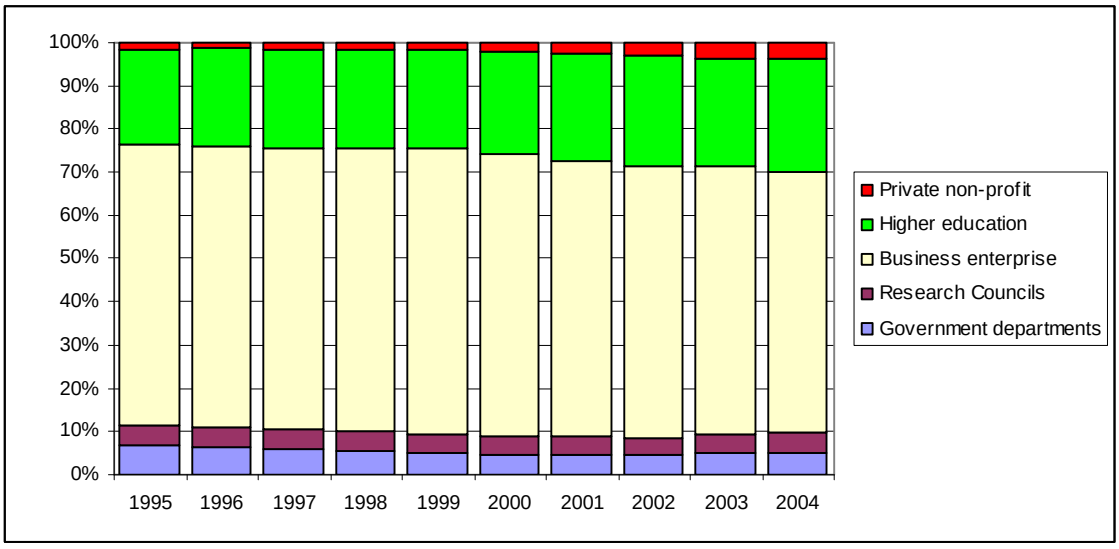


Figure 5: Expenditure on civil R&D by sector of performance



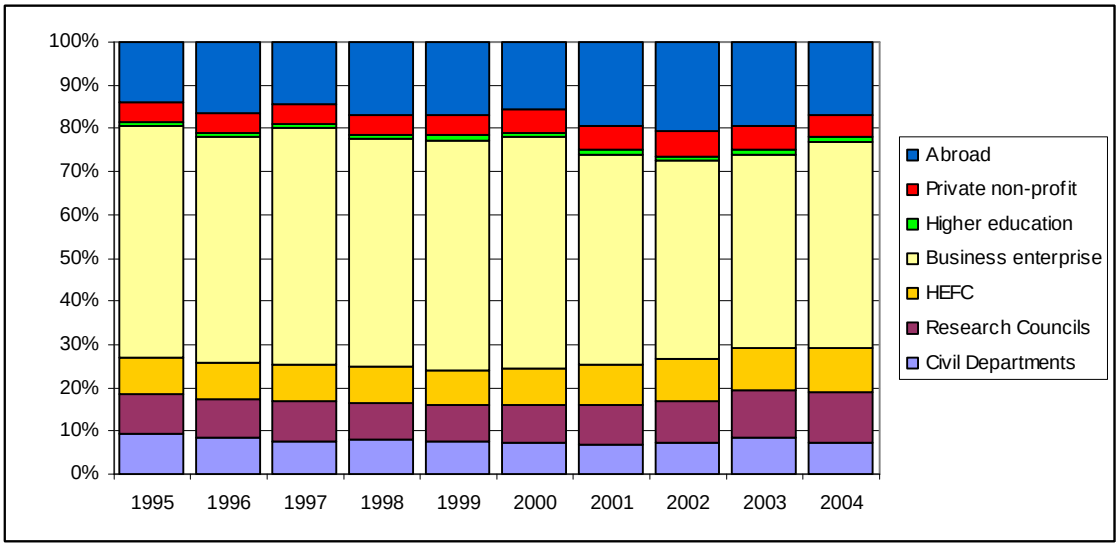
Source: http://www.berr.gov.uk/files/file38816.xls#t6.4!A1

3.2 Providers

The number of providers of (civil) R&D resources is slightly larger than the number of R&D performers. The main providers are industry, foreign providers, Research councils,

government departments and the HEFC. Higher education institutions are more involved in performing R&D activities than providing resources for those activities.

Figure 6: Expenditure on civil and defence R&D performed in the UK by sector of funder



Source: DTI, http://www.berr.gov.uk/files/file38816.xls#t6.4!A1

Office of Science and Technology

The Office of Science and Technology (OST), headed by the Chief Scientific Adviser, was established in 1993. This organisation was transferred from the Cabinet Office to the Department of Trade and Industry in July 1995. The OST co-ordinates science and technology policy across government. It aims to concentrate spending on wealth-creation, enhancing the quality of life, and meeting Britain's economic needs – and therefore improving national competitiveness. The creation of the OST was part of a larger movement which also created: 1) a new Council for Science and Technology, 2) an annual report entitled "Forward Look" which outlines government strategy for science and technology across all departments, and 3) the Technology Foresight Programme. At the same time, the research councils were restructured and a Director General of Research Councils (DGRC) was appointed within the OST. This Director advises Ministers on the allocation of the science budget and the performance and needs of the research councils. In 2007 OST was incorporated in the newly created Department for Innovation, Universities and Skills (DIUS).

3.2.1 Research Councils[3]

Research Councils are an important source of research funding for universities in the UK. In 2006 the Councils invested around £1.3 billion in universities' research. The funding is allocated to to individual researchers and research groups based on grant proposals on a competitive basis. The evaluation of the proposals is based on peer review.
There are eight UK Research Councils each established under Royal Charter. The Councils fulfil the objectives set out by Government in the White Paper "*Realising our Potential*" (1993). Six of them were established in 1994 following the While Paper. Statutory control of the Councils is exercised by the Department of Trade & Industry, supported by the Director-General of Research Councils, within the Office of Science & Technology. The UK Research Councils are:

- Arts and Humanities Research Council
- Biotechnology & Biological Sciences Research Council
- Council for the Central Laboratory of the Research Councils
- Engineering & Physical Sciences Research Council
- Economic & Social Research Council
- Medical Research Council
- Natural Environment Research Council
- Particle Physics & Astronomy Research Council

The Arts & Humanities Research Board (AHRB) was established in October 1998, as an initial response to the Dearing Report. This recommended that a new body be set up to provide support for research into the arts and humanities. The Higher Education Act 2004 established the Arts and Humanities Research Council instead of the AHRB as a fully fledged Research Council for arts and humanities alongside with other disciplines.
Their major goals of the Research Councils are to develop the strategy for investing the Science Budget to ensure that the UK remains at the forefront of world class research in existing and emerging fields within and across disciplines, to invest in world-class facilities, to enhance the UK skills base by working with universities to improve post graduate research education and training, as well as career opportunities for researchers at all levels, to foster the UK's economy and quality of life through the investment in science and technology, deliver world class services and be an independent advisor to the government.
The Government's Quinquennial Review of the Grant Awarding Research Councils (QQR) in 2001 recommended that a new high level strategy group be established to enhance the collective leadership and influence of the Research Councils and secure greater strategic coordination in the funding of science. The review also concluded that: The Councils need to develop a clearer identity and purpose, whereby they will be able to establish stronger links with the other major science funding organisations, including the funding councils, Government departments and the major charities; and A closer relationship is needed between

[3] Based on information provided by the Research Councils UK: http://www.research-councils.ac.uk/

the Councils and other key stakeholders, including the universities and the business and public service organisations which use their research and expertise (Gibson and Stocker 2001). Pressures for greater cooperation and strategic coordination between Research Councils have resulted in 2002 in the establishment of Research Councils UK (RCUK) and within that an Executive Group in which the Councils' heads "collectively own, drive and monitor the strategic and operational activities that deliver the RCUK mission". The membership of this group comprises the Chief Executives of the eight Research Councils and the Director General of the Research Councils. They also meet with Office of Science and Technology in a Joint Strategy Group, chaired by the Director General, which constitutes a forum for discussion of strategic issues. The new post of Director-General of the Research Councils within the OST also is an institution of more direct Government intervention in the R&D matters (Morris 2004).

In the period of 2004-05 – 2007-08 the Research Councils have faced a substantial increase in their allocations from £2,600 m to £3,300 m as a part of the dual support reform in the UK. The government initiated the dual support reform in 2005 working together with HEFCE, the Research Councils, and other research funders to build and maintain a sustainable research base. Another important part of the programme has been the introduction of the Transparent Approach to Costing (TRAC) methodology which shows HEIs how to calculate the full economic cost of the research work. This implies that HEIs have to calculate full economic costs of their research work while applying for external funding to the Research Councils or charities.

3.2.2 Charitable trusts, foundations and learned societies

After the HEFCs and the Research Councils, UK charitable trusts and foundations are the largest sponsors of research in universities. Charities provide up to two thirds of the amount of funds that are provided by the Research Councils. Charities are the most important source of support for medical research in the universities, in particular for larger and longer-term research programmes.

An example of a prominent charity in the biomedical sciences is the Wellcome Trust. It is a charity that provides funds to support research in the biomedical sciences and the history of medicine. Sir Henry Wellcome's will stated that the Trust's income should be used to support research bearing upon medicine and allied subjects, including veterinary and tropical medicine and the history of medicine. Grant funding is provided in three main categories: a) support for biomedical research; b) support for research in the history of medicine and c) support for communicating science.

There are a large number of organisations supporting research and representing the interests of specific disciplinary research areas. Besides representing the interests and honouring high scientific achievements, they also provide funding for research activities in universities. *The Royal Academy of Engineering* is both a national forum for leading engineers in all fields and a funding agency for engineering-related study and research. *The British Academy* is a national academy for the humanities and social sciences, established by Royal

Charter in 1902. It is an independent and self-governing fellowship of scholars The academy supports postdoctoral research in the humanities and social sciences through its research grants schemes, promoting relations between researchers in the UK and overseas, and recognising distinction in scholarship. The Academy receives a Parliamentary grant-in-aid, and administers its own private funds arising from gifts and legacies, from contributions made by the Fellows themselves, and from grants made by research foundations. A counterpart to the British Academy is ***the Royal Society*** , which promotes the natural and applied sciences. It was founded in 1660. The Society has a dual role, as ***the UK Academy of Science***, acting nationally or internationally, and as the provider of a broad range of services for the scientific community in the national interest. Its contribution to research is: encouraging research and its application through research fellowships and grants to individual scientists; disseminating the results of research through meetings, lectures, exhibitions and publications; and providing resources for, and encouraging research into the history of science.

4. FINANCIAL ASPECTS

Higher education funding is based on a dual funding system, where the major funding comes from the Higher Education Funding Councils and the additional research funding is provided by the Research Councils. Until 1992 the Universities Funding Council (UFC) and the Polytechnics and Colleges Funding Council (PCFC) were responsible for the funding of universities and polytechnics. In 1992, regional (i.e. for England, Wales, Scotland and Northern Ireland) independent, non-departmental Higher Education Funding Councils (respectively HEFCE, HEFCW, SHEFC and NIEC) were established. A Further Education Funding Council was installed for the colleges of further education. In the following sections first the funding provided both for teaching and research by the HEFCs is addressed, followed by a section on tuition fees and the student financial support. The funding of research is addressed in the third section. The chapter is concluded with an overview of the sources of income of higher education institutions.

4.1 Funds for teaching[4]

4.1.1 The Higher Education Funding Councils

The HEFCs provide funds for teaching and research. These funds can be broken down in four broad categories:

- teaching related funding; based on an enrolment based formula. The number of students enrolled is written down in an agreement between university and government (as a result of a bidding process).(63%)[5]
- research related funding (20%)
- special funding, based on project proposals that are awarded in a competitive procedure (6.4%)
- earmarked capital funding (10.6%)

HEFCE uses formulae to determine how most of the money is allocated between institutions, helping to minimise the accountability burden. The formulae take account of certain factors for each institution, including the number and type of students, the subjects taught, and the amount and quality of research undertaken (see section 4.3). After the amount of funding is determined, it is provided in the form of a 'block grant' which institutions are free to spend according to their own priorities within HEFCE's broad guidelines. Institutions are not expected to model their internal allocations on the HEFCE funding method. The constraints that the HEFCE main funding methods impose on institutions are generally in terms of delivery of overall teaching and research activity. Wherever possible, HEFCE looks to reduce the number of separate funding streams (and any associated separate monitoring) by incorporating them within their main formulaic allocations.[6]

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[4] This paragraph is based on Vossensteyn et al, 1998.

[5] The percentages reflect the relative size of the categories in the HEFCE funding in 2006. Total HEFCE funding in 2006 was £6706 million.

[6] Source: http://www.hefce.ac.uk/Pubs/hefce/2006/06_17/06_17.doc

Alongside the mainstream teaching funds, HEFCE also allocates funding each year to recognise the additional costs of recruiting and supporting students from disadvantaged and non-traditional backgrounds or disabled students. These allocations are not a form of individual student support, but rather are allocations to institutions that reflect the additional costs they may face because of the broad mix of students that they recruit. A total of £344 million is being allocated to support widening participation.
There are a small number of other recurrent grants that support teaching but are not part of the mainstream teaching allocation. For 2006-07 they comprise funding for:

- clinical academic consultants' pay (£18 million)
- additional student numbers for Lifelong Learning Networks (£6 million)
- Dance and Drama Awards (£4 million).

To reduce the burden on HEIs, HEFCE has set a limit to the total number of national special funding and earmarked capital programmes. There are eight such programmes for 2006-07, and it is expected there will be no more than six in the near future.

Table 4-1: Special and earmarked capital HEFCE funding by type of activity (2006-2007)

Activity	Funding
Institutional funding or national programmes	£924 million
Non-institutional funding	£145 million
Special institutional funding	£67 million
Finished programmes	£1 million
Total	**£1,136 million**

'Institutional funding or national programmes' includes funding that is available to or allocated to all HEIs. These include funding for Centres for Excellence in Teaching and Learning, rewarding quality enhancement, project capital funding, the Aim Higher programme, Science Research Investment Fund, the Higher Education Innovation Fund, the Higher Education Active Community Fund, and the Strategic Development Fund.
Non-institutional funding (£145 million) is provided where the activity is delivered by or through another body. This includes funding via the Higher Education Academy, the Quality Assurance Agency, Higher Education and Research Opportunities (HERO), Foundation Degree Forward, the Higher Education Regional Associations, the Arts and Humanities Research Council, the Leadership Foundation, the Joint Information Systems Committee, and local education authorities.

Special institutional funding is for specific purposes, such as the provision of national facilities or to support sector-wide initiatives. This includes funding for copyright libraries, additional funding relating to the University of London, and funding to promote improvements in procurement, costing and pricing.

4.1.2 **Allocation** mechanism for general funds for teaching

Higher education institutions receive teaching funds in the form of HEFCE grant and student fees.

The combined total of grant and tuition fees is referred to as teaching resource or simply as resource.

In calculating HEFCE teaching funds for each university and college, there are four main stages:

In stage 1 a *standard resource* for the institution is calculated. This is a notional calculation of what the institutions would get if the grant was calculated each year. It is based on each institution's profile of students, and takes into account:

- the number of students;
- subject-related factors;
- student-related factors;
- institution-related factors.

In stage 2 HEFCE calculates the *actual resource* for the institution. This is based on the teaching grant, which was paid to the institution for the previous year, adjusted for various factors such as inflation, plus assumed student tuition fee income. Then, in stage 3 the standard resource is compared with the actual resource and the percentage difference between them calculated. Finally in stage 4, if the difference between the standard resource and the actual resource is no more than 5 per cent (whether that is plus 5 per cent or minus 5 per cent), the HEFCE grant will be carried forward from one year to the next. For institutions outside the plus or minus 5 per cent tolerance band, HEFCE will adjust their grant and/or student numbers so that they move within the tolerance band over a specified period.

When these calculations are finished, a funding agreement is drawn up between an institution and the HEFCE. The funding agreement is constructed in broad terms. It implies the weighted volume of activity, which is being funded against the resource being allocated. Institutions can vary their recruitment as long as the weighted volume of activity is maintained within certain implied limits. So, for example, they may vary the balance of recruitment between full-time and part-time students or between different price groups. When the funding announcements are made, well ahead of the start of the relevant academic year, institutions cannot be sure about their recruitment in that year. This may be less than expected, the balance between subjects may vary, or the number of students not completing the academic year may differ from expectations. In most cases this does not affect their grant. However, if recruitment results in the actual resource differ by more than 5 per cent from standard resource, then action is taken to draw the institution back within that tolerance band. This would be achieved by adjusting student numbers or funding in the current and/or subsequent years.

When HEFCE provides funding for additional places in response to bids from institutions, it expects institutions to increase their student numbers. HEFCE therefore sets them a target for their overall FTE students. If they recruit below the target, HEFCE reduces the funding it has provided for their bid. However, HEFCE gives institutions a second chance to deliver the expected increases, recognising that start-up difficulties may prevent full recruitment in the first year.

4.2 Tuition fees and student support

4.2.1 Tuition fees

Until 1998, tuition fees were part of the British higher education system, but the Local Education Authorities (LEA's) paid them for regular fulltime British. However, since September 1998, students have to pay the tuition fees themselves. Students from low-income families can get financial compensation for (part of) the fees. For 2006-07, the tuition rate is up to £3,000. This system was established after prolonged debates on top up fees in 2003 after the governmental White Paper "The Future of Higher Education" (DfES 2003). In the 2003 White Paper, the government for the first time has taken a position on top up fees.

4.2.2 Student support

Grants

Today full-time undergraduate students may get all or part of their tuition fees paid by the government. How much help students get depends on their and family income. For full-time undergraduate student from lower income households, the government provides means-tested grants:

- A new non-repayable Maintenance Grant of up to £3,000 a year for new full-time students from lower income households studying at universities or colleges in the United Kingdom.
- A new non-repayable Special Support Grant (SSG) of up to £3,200 a year for new full-time students who may be eligible to receive benefits such as Income Support or Housing Benefit while they are studying
- Colleges in Northern Ireland that charge the full £3,000 tuition fee will provide bursaries of at least £300 for students who are eligible for the full £3,200 Maintenance Grant or SSG. However, for such students it is expected that the average bursary provided in 2006/07 will be around £1,000
- In England, colleges charging tuition fees of more than £2,700 will also provide bursaries and again it is expected that these may be more than the minimum of £300 for students who receive the full Maintenance Grant or SSG. Repayable maintenance loans would continue to be available. Loans continue to be means tested for those from higher family income backgrounds.

Full-time undergraduate students may receive assistance with their fees from the Government based on their financial circumstances. Postgraduate students on taught courses pay fees to institutions mostly from their own funds. The Research Councils pay fees for most postgraduate research students. Employers pay more than a third of the fees for part-time students. Students from outside the EU are expected to meet the full costs of their courses.

Loans

For new 2006/07 students the Student Loans Company provides new full-time higher education students with the following financial aid:

- Tuition fee loans to cover the full cost of tuition fees

- Maintenance loans to cover the cost of living expenses
- Grants for living costs to cover the cost of living expenses
- Students can also get additional help if they have children or adult dependants, or have a disability or specific learning difficulty.

For the majority of students, a loan is comprised of the tuition fee loan plus a maintenance loan, and this will be paid directly at the start of each academic term. Everyone on an eligible course qualifies for 75% of the maximum loan, regardless of income, and the rest is income-assessed. These loans accrue interest at the rate of inflation, which means that the amount repaid has the same value as the amount borrowed.
The repayment of loans is organised through the tax system, and only begins after the student has left higher education and is earning over £15,000. This system of collection is known as Income-Contingent Repayment (ICR), because it tapers the repayment obligation according to the gross income.

Other financial support for full-time students
Besides the financial assistance through the national support system, students may also be eligible for some more specific programs or funds administrated by the individual higher education institutions. These include access bursaries for student parents, hardship loans for students in financial difficulty, opportunity bursaries for talented students from families without higher education experiences, and incentive bursaries for teacher training students (in particular subjects).

New developments in student support
In 2007 the new government announced an increase in financial support to students. According to the new plan, students whose families earn less than £25,000 a year will get a full grant - up from the present level of £18,000. Those in families earning up to £60,000 a year will now get some form of maintenance grant. The new plan is expected to increase the number of students eligible for a full grant from the present level of 29% to one third. Two thirds of all students would be entitled to some kind of maintenance grant, up from the present level of half.

4.3 Funding of Research

Government funding for university research consists of two main streams:

1. Funding from the Higher Education Funding Councils (HEFC) for some research, for which the Ministry for Education is responsible
2. Funding from the Research Councils for research, for which the Office of Science & Technology at the Department of Trade and Industry (since 2007 DIUT) is responsible.

HEFC provides funding to support the research infrastructure, the cost of the salaries of permanent academic staff, premises, libraries and central computing costs. The general funds provided by the HEFC also support basic research in institutions and contribute to the cost of training new researchers. The Research Councils (see chapter on research infrastructure) provide for direct project costs and contribute to indirect project costs.
In addition most universities raise research income from private sources (e.g., the Wellcome

Trust), industry, through contract research and other services.
In the following we draw attention to the funding from HEFCE as an example of the performance-based funding model since the funding is allocated according to the results of the Research Assessment Exercise. The details on other funding sources, such as the Research Councils and charities are also provided.

4.3.1 HEFC funding for research: performance based research funding

Most HEFC research funds are distributed selectively to higher education institutions that have demonstrated their strength in research by reference to national and international standards. This quality is measured in a periodic Research Assessment Exercise (RAE).
HEFCE's funding for research in 2006-07 is £1,342 million and is allocated under two main headings:

- quality-related research (QR) funding – with reference to both the quality and volume of research activity (£1,318 million)
- capability funding (£22 million).

There are separate components of quality-related (QR) funding:

Table 4-2 Components of quality-related (QR) funding

Component	Part of funds
Mainstream QR allocated to reflect the quality and volume of research at institutions in different subjects	70%
Research degree programme supervision fund (including transitional funding)	15%
Charity support element allocated on the basis of eligible charity research income	10%
London weighting allocated to reflect the additional costs of provision in London	2%
'Best 5*' allocation	2%
Transitional special funding for research libraries	

Source: (HEFCE 2006)
There are two stages to the allocation of mainstream QR funds:

- Stage 1: determining the amount provided for each subject
- Stage 2: distributing the subject totals between institutions.

Stage 1: Determining the amount provided for each subject
Mainstream QR funds are divided between 68 subject areas (units of assessment). Each subject is assigned one of three cost weights, which have been calculated to reflect the relative costs of research in those subjects. High cost laboratory and clinical subjects have a weight 1.6, intermediate subjects 1.3 and all others 1.0. These weights are multiplied by the volume of research in each subject to work out the total funding for that subject.
HEFCE measures the volume of research in each unit of assessment using three separate components. These volume components apply for departments rated 4 or above in the RAE and are weighted as follows:

- research-active academic staff – 1 × number of FTE research-active academic staff funded from general funds (including NHS funding for nursing and other subjects allied to medicine) and selected for assessment in the RAE
- research assistants – 0.067 × number of FTE research assistants
- research fellows – 0.06 × number of FTE research fellows.

The number of research-active academic staff is the most important measure of volume: it accounts for 93 per cent of the total. Research-active staff numbers are fixed between RAEs. HEFCE updates other volume measures annually. The way the volume is calculated has changed for 2006-07, because research income from charities is no longer counted as one of the minor volume measures. We have also adjusted the weightings that we apply to research assistants and research fellows to ensure that the proportion of mainstream QR attributable to each source remains unchanged compared with 2005-06.

Stage 2 Distribution of the subject totals between institutions

The 68 subject totals are distributed to institutions in proportion to the volume of research multiplied by the quality of research in the subject for each institution. The volume of research for each institution in each subject is measured in the same way as in Stage 1 above, but includes NHS-funded staff for all units of assessment. The quality of research is assessed in the RAE. The last RAE was conducted in 2001 and has informed funding decisions from 2002-03 (HEFCE 2006).

In the last RAE, each institution was awarded a rating, on a scale of 1 to 5* (five star), for the quality of its research in each unit of assessment in which it was active. Ratings 1, 2, 3b and 3a attract no funding, while a rating of 5* attracts roughly four times as much funding as a rating of 4 for the same volume of research activity. As a result, HEFCE funding of research is highly selective.

The Government's White Paper "The Future of Higher Education" asked HEFCE to provide additional resources to the 'very best of the 5* departments'. In 2003-04, HEFCE distributed an additional £20 million for departments that achieved a 5* rating in both the 1996 and 2001 RAEs. From 2004-05, HEFCE extended eligibility to include those departments that achieved a rating of 5* for the first time in 2001, while maintaining or increasing the number of research-active staff submitted since the 1996 RAE. The allocation of £20 million is in proportion to London-weighted mainstream QR funding for the departments concerned. An additional £4.5 million has been allocated in 2006-07 to ensure that no institution receives less overall through this stream of funding than in 2003-04.

Other elements of QR funding

In 2005 HEFCE announced the establishment of the new charity support element within QR. A total of £135 million is being allocated through this new fund. This is allocated on the basis of eligible charity research income awarded to institutions in departments rated 4 and above in the 2001 RAE, or rated 3b or 3a and receiving grant from the Research Capability Fund. Allocations are not weighted to reflect RAE ratings above these thresholds.

In 2005-06 HEFCE established an enhanced supervision fund, bringing together funding for

research degree programmes (RDPs) under a single stream within QR. For 2006-07, the funds for RDPs total £188 million for the sector, allocated in proportion to cost-weighted and London-weighted home and EC postgraduate research student numbers in years 1 to 3 of full-time study or years 1 to 6 of part-time study, in departments rated 4 or above. HEFCE also allocates £3 million as transitional RDP supervision funding for departments rated 3a that do not receive research capability funding (HEFCE 2006).

For 2006-07 HEFCE provides £22 million as a Research Capability Fund, to support research in emerging subject areas where the research base is currently not as strong as in more established subjects. Seven units of assessment (UOAs) are eligible for this funding, on the basis that they have low proportions of staff in departments rated 4, 5 or 5* in the 2001 RAE, and had relatively high proportions of QR funding in 2002-03 attributable to 3b or 3a-rated departments.

In 2007/08 universities will be going through a next Research Assessment Exercise – RAE 2008 – which will serve as a basis for research funding until 2010. The outcomes will be published by the funding bodies in December 2008. The general format of the RAE2008 is similar to the precious exercise. It is an assessment that is based on expert review by discipline-based panels considering written submissions from HEIs. There are however three primary changes how the assessment results are presented. In the new assessment, the results will not be published on a fixed seven-point scale, but a *graded profile* is being used. This means that the panel will evaluate the proportion of research corresponding to each grade category, instead of producing one average score. "This allows the funding bodies to identify pockets of excellence wherever these might be found and reduces the 'cliff edge' effect where fine judgments at the grade boundaries can have significant funding impacts" (RAE 2008)

Secondly, the RAE2008 will use a *two-tired panel structure*. Each academic discipline is assigned to one of 67 units of assessment and all the 67 sub-panels of experts work under the guidance of 15 main panels. This structure aims to provide a more consistent approach both to setting criteria and to the assessment of work in related fields.

Thirdly, list of evaluation criteria has been revised and more explicit criteria in each subject has been provided in order to enable the proper assessment of applied, practice-based and interdisciplinary research.

4.3.2 Research Councils and charities' funding for research

In the period of 2004-05 – 2007-08 the Research Councils have faced a substantial increase in their allocations from £2,600 m to £3,300 m as a part of the dual support reform in the UK. The government initiated the dual support reform in 2005 working together with HEFCE, the Research Councils, and other research funders to build and maintain a sustainable research base. Another important part of the programme has been the introduction of the Transparent Approach to Costing (TRAC) methodology which shows HEIs how to calculate the full economic cost of the research work. This implies that HEIs have to calculate full economic costs of their research work while applying for external funding to the Research Councils or charities.

After the HEFCs and the Research Councils, UK charitable trusts and foundations are the largest sponsors of research in universities. Charities provide up to two thirds of the amount of

funds that are provided by the Research Councils. Charities are the most important source of support for medical research in the universities, in particular for larger and longer-term research programmes. An example of a prominent charity in the biomedical sciences is the Wellcome Trust. It is a charity that provides funds to support research in the biomedical sciences and the history of medicine. Sir Henry Wellcome's will stated that the Trust's income should be used to support research bearing upon medicine and allied subjects, including veterinary and tropical medicine and the history of medicine. Grant funding is provided in three main categories: a) support for biomedical research; b) support for research in the history of medicine and c) support for communicating science.

4.4 Sources of income of higher education institutions

Higher education institutions receive almost 40% of their income from the HEFC. Within that part, two thirds are teaching related recurrent funds and one fifth research related recurrent funds.

Tuition fees are the second major component of HEIs income. One third of that income comes from standard fees, one third from oversees students and the rest from other fees.

Research grants and contracts, the third source of income, are mainly provided by research councils, UK based charities and UK governments. Industry accounts for only 8% of those resources.

In addition to these 'academic work related' sources of income, HEIs have also income from other services rendered and endowment income.

Table 4-3 Sources of income of UK HEIs

Source	2001	2005
funding councils	39,3%	38,7%
tuition fees	23,0%	23,8%
research grants and contracts	16,8%	16,0%
other income	19,1%	19,8%
endowment income	1,8%	1,8%

Source: HESA

5. GOVERNANCE STRUCTURE

The United Kingdom consists of Great Britain (that is, England, Wales and Scotland) and Northern Ireland. The UK still is a unitary state, but there has been power devolved to the constituting nations, especially in the field of higher education. There are different funding councils in each area and the governing bodies in each area have some autonomy in the field of higher education.

5.1 Historical developments in the policy-network for higher education

The traditional policy-network in the field of higher education was simple, at least for the chartered universities. All-important was the University Grants Committee (UGC) established in 1919 by a Treasure minute, without any statutory basis. The UGC up to 1964 resided under the Treasury and distributed the state budget for higher education over the universities. Members of the UCG were academics; the state had no direct control over higher education. The UGC distributed the money over universities according to secret criteria, since explicit and known criteria would influence the behaviour of the university and touch upon academic freedom. After 1964 the UGC was brought under aegis of the Department for Education and Science (DES) but it kept its dominating role in higher education. In practice this meant that universities could be sure that each year they would receive an amount of money that was more or less based on what they received the year earlier (Salter and Tapper 1994).
The first problems in this very static system arose in 1974-1975 with the economic crisis following the oil shocks. The perceived necessity to cut-down expenditure on the university sector increased the central planning function of the UGC, since it was the UGC that was best placed to attempt to rationalise the university sector and increase the efficiency of higher education (Williams, 1992). The government reduced universities recurrent grants over a three-year period with 17 per cent. As a consequence of this the central planning function of the UGC reached a high peak. The UGC administered these budget cuts. It is unknown which criteria the UGC employed, but individual universities were cut with percentages ranging from 6 to 44. This top-down selective cutting implied a strong and central steering on the part of the UGC. From the early eighties onwards, to its abolishment the UGC worked actively on improving the information base it needed to plan rationally (Salter and Tapper 1994). The UGC worked on a system that was to provide uniform management statistics and performance indicators for the universities. This information was used for planning from the top down that included earmarked resources for favoured academic subjects and an ongoing rationalisation of degree programmes favouring the expansion of larger and the abolishing of smaller departments.
With the Education Reform Act, the UGC was replaced with the Universities Funding Council (UFC). This UFC was under the direct control of the Department of Education and Science. Moreover, a majority of its members were not from inside higher education. Third, as a funding body UFC did not fund institutions, but provided funds in exchange for the provision of specific academic services (Salter and Tapper 1994). In 1992 the UFC was replaced with other funding councils that were funding both the traditional universities and the former polytechnics, but were regionally oriented, the so-called Higher Education Funding Councils for England, Scotland and Wales. The combined changes resulted in a policy network that was

organised around the state. (Salter and Tapper 1994) describe the English system as a hierarchical three-level system. The first level sets out the parameters for the system, which is done by government and the department of education and controlled by legislation. The second level is that of managing the system. The goals of the system are decided on level one, but how these are attained is largely left to this level in which the Higher Education Funding Council for England (HEFCE) plays a central role. On the third level, the universities have autonomy within the boundaries of what is decided on level one and two. There is of course some consultation of the lower levels by the higher levels, as well as lobbying by lower levels at higher levels, but the predominant direction of the policy-process is top-down.
The abolishment of the UGC was not the only sign of a state centralising its authority over higher education, other actors in between the state and the universities were marginalised as well. The Committee of Vice Chancellors and Principals (CVCP), once a quite powerful actor, and closely involved in what went on in the UGC, was very submissive to governmental pressures. The changes in higher education that have led to the abolishment of the UCG have turned the CVCP in an interest group that seeks to influence governmental decision-making. The committee has no institutionalised position in the policy process, and although government consults it, the committee has no direct influence on the decision-making process. Moreover, especially after 1992, the influx of more Vice Chancellors from the former polytechnics have made it more difficult for the CVCP to speak with one voice.
The former polytechnics too, were placed under central control. Up to the eighties these were governed by local authorities and the state had no direct influence. This was changed when they first were placed under a national funding council, the Polytechnics and Colleges Funding Council and then finally under the same funding councils as the traditional universities (Theisens 2003).

5.2 Present system of governance

There are now four different governing bodies involved in higher education policies: the Department of Education and Employment, in England; the Welsh Office; the Scottish Office Education Department and; and the Northern Ireland Education Department. In addition, UK-wide, there is a division within the Department for Trade and Industry, the Office of Science and Technology, which is responsible for the budgets of the six research councils and for other R&D activities in universities and colleges. Each department is headed by a Secretary of State, who is also a member of the Cabinet. Junior ministers have specific responsibilities within these departments. In general it is a junior minister who has day-to-day responsibility for higher education policy.
The detailed development of higher education policies, however, is the responsibility of the funding councils. There are four councils: the Higher Education Funding Council for England (HEFCE); the Funding Council for Wales (HEFCW); the Northern Ireland Education Council (NIEC) and the Scottish Higher Education Funding Council (SHEFC). These funding councils have three main roles. Firstly, they advise the government on the needs of their particular sector. Secondly, they distribute the available funds among the institutions for which they are responsible. And finally, they ensure that these institutions are financially healthy and that the quality of their academic programmes is adequate.

There are several bodies representing the interests of the universities. In the past all universities were represented by the Committee of Vice-Chancellors and Principals (CVCP). This organisation started in 1918 and secured a mandate from the member universities in 1930: "it is desirable in the common interests of the United Kingdom to constitute a Committee of Vice-Chancellors and Principals for purposes of mutual consultation". This organisation has now renamed itself Universities UK. Its success as a lobby group has been varied. One of its problems in recent years is the enormous increase in the quantity and diversity of its members. Especially after 1992 when the Polytechnics became universities it became clear that it was difficult to maintain consensus among the universities. Partly in a response to these developments, there are now two groups that lobby for the interests of a selection of universities. The Russell group, an informal self-selected representative body from research-led institutions, so-called because its meetings take place in the Russell Hotel, claims to be the representative of the 'Ivy-league' universities. The universities '94 group consists basically of those universities that have not been accepted in the Russell group but claim to be of a similar quality.

England

The educational systems in England and Wales are broadly the same (Eurybase 2005). Education is administered at both national and local level in each country. Education legislation is contained in a series of Education Acts and Regulations (Statutory Instruments), made by the Secretary of State for Education in England and the Secretary of State for Wales in Wales and approved by the Parliament. Education Acts apply to both England and Wales but, when applied to Wales, references to the Secretary of State mean the Secretary of State for Wales. Acts are implemented by means of Orders (also statutory instruments); these may be introduced separately for England and Wales and may differ in detail. For example there are differences in National curriculum requirements, including requirements for the teaching of the Welsh language and other Welsh elements in some subjects.

The Secretary of State for Education and Skills is appointed by the Prime Minister of the day and is accountable to Parliament for controlling and giving direction to the public education system in England. The Secretary of State is supported by two Ministers of State and three Parliamentary Under-secretaries. The professional and administrative staff of the Department for Education and Skills (DfES) and the staff of the non-ministerial and non-departmental public bodies such as the Office for Standards in Education (OFSTED) and the Qualifications and Curriculum Authority (QCA) also assist. The Secretary of State represents education and employment in the Cabinet. The Secretary of State for Education and Skills establishes education policy; consults relevant organisations and is responsible for monitoring the quality of schooling and for the efficient use of resources.

The Department for Education and Skills (DfES) is the central government department responsible for planning and monitoring the education service in England. The DfES is staffed by permanent civil servants, headed by a Permanent Secretary, who are responsible directly to the Secretary of State for Education and Skills. The DfES has no regional structure, but it is divided into a number of Directorates responsible for different aspects or sectors of the

education and employment service. Each Directorate is composed of several Divisions.
The DfES commissions and publishes independent reports on aspects of the education system, which are advisory unless they become incorporated into legislation. It also publishes statistical information.
In summer 2007 the Government established the new Department for Innovation, Universities and Skills (DIUS). The new department will bring together functions of the Office of Science and Innovation from the former Department of Trade and Industry and the further and higher education and skills, previously part of the Department for Education and Skills. DIUS is expected to deliver the Government's long-term vision for science, research and innovation and skilled workforce in order to ensure the competitiveness of the UK in global markets. DIUS is expected to work closely with the other two new departments – the Department for Business, Enterprise and Regulatory Reform (BERR) and the Department of Children, Schools and Families (DCSF).

Wales

As indicated earlier, although the education systems in England and Wales are broadly the same, the particular needs of education in Wales are addressed by the Secretary of State for Wales, the Welsh Office, Her Majesty's Chief Inspector (Wales) and the Welsh agencies. Examples of these agencies are the Curriculum and Assessment Authority for Wales (known by its Welsh acronym ACCAC) and the Higher Education Funding Council for Wales. The Welsh Language Board is responsible for promoting and facilitating the use of the Welsh language and for advising the Secretary of State, public bodies and others on matters concerning the Welsh language. Under the Welsh Language Act 1993, the Board will consider Welsh language schemes prepared by local education authorities, school and college governing bodies and other public bodies involved in education in Wales.
The Secretary of State for Wales is appointed by the Prime Minister and is accountable to the Parliament for all delegated matters relating to Wales, including those aspects delegated in accordance with the Transfer of Functions (Wales) Order of 1970 and the Transfer of Functions (Wales) (No 2) Order of 1978. He or she is assisted by two Parliamentary Under-Secretaries , by the staff of the Welsh Office and the Office of Her Majesty's Chief Inspector (Wales). The Secretary of State for Wales is responsible for all matters relating to education and training in Wales, with the exception of matters relating to the terms and conditions of service of teachers, which remain the responsibility of the Secretary of State for Education and Skills.
The Welsh Office is responsible to the Secretary of State for Wales. The Welsh Office is concerned primarily with policy development. It has relatively few executive functions, but oversees and, where appropriate, directs the execution of government policies by local authorities, the health service, non-departmental public bodies and Training and Enterprise Councils. The wide range of the Department's work is reflected in its structure of 12 groups split into almost 60 divisions, four of which deal with educational policy.

Northern Ireland

The education system in Northern Ireland has its own legislation and structure.
Public education in Northern Ireland is administered centrally by the Department of Education Northern Ireland (DENI) and locally by five Education and Library Boards.
The Secretary of State for Northern Ireland is appointed by the Prime Minister of the day and is accountable to the Parliament for all delegated matters relating to Northern Ireland. He or she is assisted by two Ministers of State, one of whom is responsible for education, and two Parliamentary Under-Secretaries. The Minister with responsibility for education is assisted by the professional and administrative staff of the Department of Education Northern Ireland (DENI) and the Education and Training Inspectorate of DENI. The Secretary of State for Northern Ireland is responsible for the whole range of education, from pre-school through to higher education, as well as for sport and recreation, for youth services, for arts and culture, including libraries, and for the development of relations between schools and the community.
In accordance with the Education Reform (Northern Ireland) Order of 1989, the Department of Education Northern Ireland (DENI) has a general duty to promote the education of the people of Northern Ireland and to secure the effective implementation of relevant legislation and policies by working with the Education and Library Boards (Boards) and others. The main concerns of DENI are the formulation of national policies for education and the maintenance of consistency in national standards. It is responsible for the broad allocation of resources for education, for the rate and distribution of educational building and for the supply, training and superannuating of teachers. The Department is headed by the Permanent Secretary and comprises two commands, each led by a Deputy Secretary and the Education and Training Inspectorate which is led by the Chief Inspector.

Scotland

In 1999 a new Scottish Parliament and Executive were established with legislative and executive responsibility for a wide range of devolved matters, including education and training. The Scottish Executive includes an Education Department and an Enterprise, Transport and Lifelong Learning Department (SEETLLD). While the Education Department is responsible for pre-school and school education, the SEETLLD is responsible for higher education.
It has national oversight of education, advises on national policy, co-ordinates the activities of education authorities and other bodies with an interest in education and issues guidance on such matters as curricula and teaching methods. It provides information and guidance on the design of educational buildings and on health and safety matters affecting schools and colleges.
At national level consultation takes place regularly between the SEETLLD and a range of bodies, some of which have been set up to provide the Government with advice on particular aspects of education and others represent important groups actively involved in the educational system (Eurydice 2005)

5.3 Institutional governance

All universities are autonomous in the UK, and as such are responsible for their own internal organisation. Their governing bodies are responsible for ensuring the effective management of the institution and for planning its future development. They are ultimately responsible for all the affairs of the university, such as arranging their own administration and recruiting their staff.

Subject to the responsibilities of the Council or Board of Governors, vice-chancellor is the head of the institution. Vice-chancellor is the chief academic and administrative officer who works closely with the governors of the institution. The internal governing of a university differs depending upon whether the institution was established before or after 1992 (Stephenson 1996).

If the university was established before 1992, the governing body is the Council which normally has responsibility for the conduct of all the affairs at the university. Membership of the Council comprises officers of the university, elected staff members and student representatives, as well as members who have been appointed by local authorities, affiliated institutions.

If the university was established after 1992, the governing body is the Board of Governors which has responsibility for the conduct of all the affairs at the university. Membership of the Board of Governors comprises independent members, co-opted members and members of staff, the student body and the local authority (Council 2004).

In the old universities Senate has an important role in deciding on academic matters subject to the overall control of Council. But in the case of the new university, it is the role of vice-chancellor in consultation the Academic Board. Thus, the Academic Board has less power in the new universities as compared to the Senate in the old universities (Stephenson 1996).

Related academic departments in universities are usually grouped into faculties (e.g. the Faculty of Arts, of Science, of Social Sciences and so on) for administrative purposes. The head of a faculty is the Dean. This post used to rotate among senior academic staff within the faculty, the term of office lasting for one, two or possibly three years. This is now changing with more and more Deans being recruited from the outside, staying in office for longer periods and remaining in management after their work as a Dean. Also, the tasks of a Dean are more and more a full-time job with very little time left for teaching and research.

The faculty decides on such issues as approving new courses and formally awarding degrees. The precise function of the faculty, however, varies between universities. Every faculty forms a number of committees and there is considerable variation between universities in the frequency of full faculty meetings and the number of committees. There is no legislation requiring student representation on the bodies mentioned above, but many do have one or two student representatives, whose participation may be limited to a non-voting role.

6. QUALITY ASSURANCE

6.1 Introduction

The scale of the effort of quality assurance in the UK has been impressive, starting with the development of a Research Assessment Exercise to evaluate the quality of research in all university departments, then Academic Audit process to assess quality assurance processes in all academic institutions. The Quality Assurance Agency developed a process for assessing teaching quality in the majority of subject fields in every institution. Also it developed A Framework for Higher Education Qualifications and subject benchmark statements in 47 fields designed to inform academic standards. Most importantly, most of this quality assurance endeavour has been followed by the according financial measures, such as performance based state funding (Dill 2004).

From 1992 until 1998 the Further and Higher Education Act of 1992 obliged the funding councils to ensure that the quality of the academic programmes which they supported was of an adequate standard. As a result the Higher Education Funding Councils set up the Higher Education Quality Council (HEQC). The HEQC was responsible for auditing the effectiveness of institutions' quality assurance arrangements, promoting quality enhancement, co-ordinating sector-wide networks, and organising good practice forums. Considerable confusion arose about the precise difference between quality assessment and academic audit and institutions complained about the bureaucratic burden imposed upon them.

Since then the Quality Assurance Agency for Higher Education has been established by the state, replacing the HEQC. The Agency took over the conduct of quality assessments on behalf of the Higher Education Funding Council for England and the Higher Education Funding Council for Wales from October 1997.

In the October 2002 issue of *Higher Quality*, the journal of the Quality Assessment Agency, the director of the agency signalled an important movement from accountability to quality enhancement. "After many years of discussion and argument about whether or not, and if so how, an external agency should review the academic quality and standards of higher education, primarily for the purpose of accountability, the spotlight has now turned away from questions of accountability towards enhancement." (Williams 2002)

This statement reflects an important shift away from a quality mechanism that aims to assess the quality of an institution and a specific subject taught in an institution, towards a system that analyses the quality of these institutions and subjects and advises on ways to improve. This trend can be seen in the abolishment of subject review and the bringing together of the reviews on institutional and subject levels. Subjects in each university are no longer scored on a 24 scale, but are analysed as part of an institutional audit. The focus on quality enhancement is also reflected in the rise of alternative ways to increase quality: frameworks for higher education qualification, benchmarking information and dissemination of good practices.

6.2 Institutional Audit

Since 1998 the Quality Assessment Agency has been working with the sector and other stakeholders to develop an integrated academic review method that brings together the hitherto separate processes of reviews at institutional and subject levels (QAA 2006) . This has involved extensive consultation, testing and piloting. The new method was first introduced in Scotland, and became available in England, Northern Ireland and Wales from 2001-02. The institutional review element of academic review has evolved from the continuation audit

programme, which has been concluded in December 2001.
The revised institutional audit process builds upon the procedures that operated from 2002-03 to 2005-06 known as the 'transitional arrangements' described in the Handbook for institutional audit: England, pubished by QAA in 2002. QAA has an office in Scotland, known as QAA Scotland, QAA works closely with the Higher Education Funding Councils for Wales and the Department for Employment and Learning in Northern Ireland.

6.2.1 The objectives of institutional audit

- ensure that the academic standards of UK HE awards and qualifications are maintained and securely managed
- enable students and other stakeholders to have confidence in the proper management of the quality of learning opportunities offered through the programmes of study that lead to those awards
- check that effective arrangements are in place to maintain appropriate academic standards and enhance the quality of postgraduate research programmes
- contribute, in conjunction with other mechanisms and agencies in HE, to the promotion and enhancement of quality in teaching, learning and assessment
- ensure that students, employers and others can have ready access to easily understood, reliable and meaningful public information about the extent to which the HEIs in England and Northern Ireland are individually offering programmes of study, awards and qualifications that meet national expectations in respect of academic standards and quality of provision
- ensure that, if the management of academic standards or of the quality of provision is found to be weak or seriously deficient, the process forms a basis for ensuring rapid action to improve it
- provide a means of securing accountability for the use of public funds received by HEIs (QAA 2006)

Institutional audits examine:

1. the effectiveness of an institution's internal quality assurance structures and mechanisms, in the light of the UK Academic Infrastructure and the European standards and guidelines for quality assurance in higher education, and the way in which the quality of its educational provision and academic standards of its awards are regularly reviewed and resulting recommendations implemented. This provides public information on an institution's soundness as a provider of HE qualifications of national and international standing
2. the effectiveness of arrangements for maintaining appropriate academic standards and enhancing the quality of postgraduate research programmes
3. the effectiveness of an institution's approach to building systematically upon the outcomes of their internal quality assurance procedures, on the findings of reports of external reviews, and on other information and feedback from students, graduates and employers, in order to develop and implement institutional approaches to enhancing the quality of

provision

4. the accuracy and completeness of the information that an institution publishes about the academic standards of its awards and the quality of its educational provision, including the published teaching quality information (TQI).

The institutional audit reports are intended to provide information of use to both a lay and professional readership. The published report includes a summary intended primarily for the public, especially potential students, which is available separately from the rest of the report. In addition, the institution is invited to provide a brief statement to be published as an appendix to the report. The statement provides an opportunity for the institution to report on developments since the audit visit, particularly in respect of actions taken or proposed to address the recommendations of the audit team (QAA 2006).

6.3 Research Assessment

In the UK, the Research Assessment Exercise has been the major policy instrument to assess the quality of research in universities and inform the funding decisions. Since 1992, Funding Council allocations for research have been based upon performance as determined by the RAE. Funding from this source (QR) has been increasingly selective and concentrated on the highest performers. In the most recent RAE (2001) departments or basic units of research were assessed on a seven point scale. Those awarded the four lowest grades received no QR funding; over 85% was allocated to those in the two top grades.

The RAE is essentially a peer review process. In the last exercise in 2001, research in the UK was divided into 68 subject areas or units of assessment. An assessment panel was appointed to examine research in each of these areas. Higher education institutions were invited to make submissions, in a standard format, to as many units of assessment as they chose. There was no upper or lower limit on the number of units an institution could submit to. Nor was there any limit on the number of staff submitted as research active, although data were published on the proportion of staff submitted as research active.

In RAE 2001 panels produced grades on a seven point scale (1, 2, 3a, 3b, 4, 5 and 5*)[7]. However, 80% of the researchers whose work was assessed were in submissions receiving one of the three top grades (4, 5, and 5*), while 55% were included in submissions receiving one of the top two grades (5 and 5*). The amount of discrimination provided by the exercise is therefore less than the length of the rating scale would suggest. (Roberts 2003) Ratings 1, 2, 3b and 3a attract no funding, while a rating of 5*attracts over three times as much funding as a rating of 4 for the same volume of research activity. As a result HEFCE's funding of research is highly selective.

In 2007/08 universities will be going through a next Research Assessment Exercise – RAE 2008 – which will serve as a basis for research funding until 2010. The outcomes will be published by the funding bodies in December 2008. The general format of the RAE2008 is similar to the precious exercise. It is an assessment that is based on expert review by

[7] The same seven point grading scale was used in the previous exercise in 1996. Earlier exercises used shorter scales.

discipline-based panels considering written submissions from HEIs. There are however three primary changes how the assessment results are presented. In the new assessment, the results will not be published on a fixed seven-point scale, but a *graded profile* is being used. This means that the panel will evaluate the proportion of research corresponding to each grade category, instead of producing one average score. "This allows the funding bodies to identify pockets of excellence wherever these might be found and reduces the 'cliff edge' effect where fine judgments at the grade boundaries can have significant funding impacts" (RAE 2008)
Secondly, the RAE2008 will use a *two-tired panel structure*. Each academic discipline is assigned to one of 67 units of assessment and all the 67 sub-panels of experts work under the guidance of 15 main panels. This structure aims to provide a more consistent approach both to setting criteria and to the assessment of work in related fields.
Thirdly, list of evaluation criteria has been revised and more explicit criteria in each subject has been provided in order to enable the proper assessment of applied, practice-based and interdisciplinary research.
After 2008 research assessment procedures will be reformed. The RAE2008 is expected to be the last RAE in its current format and its results will guide the funding decisions until 2010/11. The peer review based assessment exercise will be exchanged for a new system – metrics – that is based on quantitative measures. The new system is expected to simplify the assessment procedure and avoid some unintended effects that the RAE has demonstrated. What indicators are included in the new system is not confirmed yet. Likely measures of quality include a department's research income, its numbers of PhD students, and its citation rates. The HEFCE is primarily responsible for the new system and will report on progress in September 2007.

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8. APPENDIX

Table 8-1. New entrants in first degree programmes

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economics	39280	41690	45168	44901	44310	43785	46185	55575	57870	57505	59520
Medicine	29893	31928	33180	35167	36330	37955	42590	43700	50160	50920	54090
Social Sciences	44388	43532	44923	44052	44890	45865	48375	51675	57340	59395	64240
Agriculture	3193	3337	3553	3481	3280	3315	3550	3420	3570	3570	3760
Natural Science	42912	44496	47545	44691	43680	42985	43440	57550	64400	64640	70975
Law	13939	14302	14800	14133	13720	14055	15270	19060	21195	21025	21935
Technical Science	61104	59925	61335	60501	59570	61225	63895	67075	66280	62995	63015
Humanities	36220	35686	37666	35400	36740	37660	39995	56010	59310	58940	63960
Arts	25777	25579	28849	28917	29750	31400	33095	38905	39525	41500	45715
Other	44342	69226	45900	43769	39700	38830	40555	4290	11595	10985	11525
	341048	369701	362919	355012	351970	357075	376950	397260	431245	431475	458735

other undergraduate	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economics	31712	29443	27261	27569	25900	26235	28395	26885	30075	28090	27540
Medicine	23061	34523	34844	49225	53410	68530	65820	75760	79480	79980	77515
Social Sciences	21889	18991	18992	20549	21290	26755	37120	48545	56800	52145	55195
Agriculture	2283	2045	2394	2282	2160	2310	2495	2155	2390	2590	4525
Natural Science	4703	4804	4920	5939	5620	5710	7075	7775	8805	10660	11985
Law	2132	1977	2123	2449	2430	1205	1665	2560	2130	2505	2820
Technical Science	23425	22014	23240	24580	24920	31810	31950	31470	28685	31435	32135
Humanities	13896	14585	15555	20689	20340	29970	36765	46495	44800	42470	42765
Arts	5667	5568	5910	6988	6740	9140	11235	12345	12820	14700	14680
Other	34682	46931	47189	76157	77520	91460	108090	76640	52040	53655	59490
	163450	180881	182428	236427	240330	293125	330610	330630	318025	318230	328650

higher degrees (PG)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economics	18246	19691	20984	23414	24050	25095	28820	35250	35810	36780	38055
Medicine	7978	8307	8663	10276	10110	11135	11737	13655	13980	14995	15765
Social Sciences	21394	20635	20663	22691	23120	23085	23390	23245	28585	27890	29870
Agriculture	1313	1206	1167	1422	1320	1425	1490	1495	1505	1465	1420
Natural Science	12106	12354	12810	13274	13650	13670	13970	16825	18940	19020	19680
Law	3560	3791	4187	4391	4870	5170	5645	7920	7310	7505	7345
Technical Science	18263	18206	18519	20416	21780	23755	25475	28240	28545	28755	28295
Humanities	11439	12044	12494	13063	13560	14195	14760	16575	18240	17915	18840
Arts	3406	3674	4212	4473	4990	5185	5535	6265	7145	7185	7570
Other	2183	481	2616	2734	2410	2685	3135	155	195	140	200
	99888	100389	106315	116154	119860	125400	133957	149625	160255	161650	167040

other post graduate programmes	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economics	12149	12402	12607	13346	12480	12035	12415	13040	13175	12010	11770
Medicine	2904	3054	3720	4278	4810	6395	7270	7865	9410	11650	13315
Social Sciences	33449	35163	38946	37797	37300	45035	49925	52935	59630	57845	59725
Agriculture	228	200	164	179	190	305	195	250	160	245	235
Natural Science	1111	967	1033	1028	1210	1385	1795	2530	2665	2120	2110
Law	5448	4937	5343	5568	5640	6625	7675	7880	7840	7425	7435
Technical Science	5087	5562	5415	6433	5220	6075	5555	5125	5320	4715	4580
Humanities	2261	2157	1928	1910	1830	2015	2215	2190	1950	1800	1890
Arts	1084	1147	915	925	1010	1190	1305	1220	1155	1110	1160
Other	1029	1873	8688	13123	12560	8330	8190	6460	1420	920	1160
	64750	67462	78759	84587	82250	89390	96540	99495	102725	99840	103380

Table 8-2: Students enrolled

First degree (bachelor)	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Economics	105275	109468	112736	116710	117420	119745	122575	147305	151845	153705	157275
Medicine	83506	92240	96049	101375	104820	111835	120535	125735	140135	148110	158380
Social Sciences	137379	132072	129517	129599	128780	131285	134345	137915	153980	164470	174605
Agriculture	9883	10269	10313	10735	10370	10530	10800	10335	11100	11030	11435
Natural Science	120917	127435	132662	132455	132380	132030	130420	162935	183760	188800	197415
Law	39288	38781	40545	40539	39460	40035	41905	50495	56895	59090	61440
Technical Science	165085	163857	163341	164193	163920	169950	176300	188420	192915	188895	184345
Humanities	110112	111232	113110	111216	113420	113925	116625	158765	174115	175985	211695
Arts	64864	67733	73638	76582	78830	82900	87525	100975	106310	111590	118180
Other	212295	209656	117478	118579	111040	105665	107815	9900	39730	35980	34095
	1048604	1062743	989389	1001983	1000440	1017900	1048845	1092780	1210785	1237655	1308865

Other undergraduate	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005

Economics	52984	49444	44516	42812	39960	40865	42415	42810	47465	43990	43375
Medicine	48478	71197	78483	89113	99010	124210	125120	139635	146215	147110	145520
Social Sciences	33467	33266	33037	30434	31140	40310	52545	71930	85135	84160	82975
Agriculture	4597	4343	4607	4491	4370	4630	4700	4130	4195	4405	6465
Natural Science	8844	8485	7913	8563	8000	8575	9600	10905	14605	16845	17705
Law	3061	2896	2917	2966	2810	1715	2180	3370	3185	3640	4200
Technical Science	40152	37820	37118	37853	38040	48100	49015	49385	49855	51450	51585
Humanities	24842	28969	27983	27279	27300	37690	46405	58920	63170	59675	60310
Arts	10354	10454	10441	10668	10120	13025	15355	17655	18695	21235	21835
Other	74292	83090	176659	186255	189610	204915	220055	186080	80315	84730	77915
	301071	329964	423674	440434	450360	524035	567390	584820	512835	517240	511885

Higher degree	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Economics	42173	41721	43611	46515	49680	55895	61220	72660	78660	80100	82880
Medicine	22530	24857	25693	27168	27670	31985	33940	36900	40085	42425	45060
Social Sciences	50205	50661	52307	54349	55000	58420	58730	55240	63910	66530	69320
Agriculture	3536	3433	3281	3268	3200	3575	3585	3850	3740	3635	3345
Natural Science	36830	38490	38591	38335	38410	40575	40320	45895	49740	50870	52020
Law	6235	6892	7225	7838	8190	9895	10075	13360	13385	14115	14280
Technical Science	43433	43768	44618	46074	47920	55885	60095	64540	67120	68320	68175
Humanities	26919	28628	30055	31384	32230	35250	36070	39350	42725	42285	43715
Arts	6611	7510	8310	8625	9470	10425	10990	12455	13700	14115	14740
Other	15939	13538	5464	5543	4940	5410	6470	405	460	485	845
	254411	259498	259155	269099	276710	307315	321495	344655	373525	382880	394380

Other postgraduate	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Economics	20634	21688	21977	20691	20130	21115	20575	38170	22085	21520	20880
Medicine	5293	5387	6633	7395	8410	11440	12805	19090	15115	18460	20020
Social Sciences	49484	50217	51295	52017	50040	60930	67435	52500	81675	80330	81870
Agriculture	452	482	331	331	390	715	510	1020	390	455	490
Natural Science	1869	1744	1587	1539	1820	2350	2855	10030	3740	3050	3260
Law	6642	6198	6754	7018	7390	8515	9710	10120	10520	9810	9660
Technical Science	8241	8753	8838	9702	8040	10405	10335	23720	10405	10140	9185
Humanities	3421	3045	2847	2579	2490	2850	3135	13105	2780	2650	2720
Arts	1500	1473	1261	1237	1370	1550	1615	680	1490	1455	1430
Other	18172	5087	26323	31732	31830	21545	19365	340	2100	1905	1460
	115708	104074	127846	134241	131910	141415	148340	168775	150300	149775	150975

Table 8-3: Graduates by type of programme and discipline

first degree (bachelor)	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Economics	28413	29499	29401	30937	31910	33515	33590	40310	41550	42190	42445

Medicine	18259	20316	22184	23435	23760	26570	28460	29840	31720	35325	37505
Social Sciences	35945	35319	34524	35094	34660	34640	35135	35045	36420	39440	42835
Agriculture	2572	2796	2760	2857	2900	2905	2970	2710	3075	2915	2820
Natural Science	31653	33141	34120	34665	35720	36390	35040	41305	43345	45000	46240
Law	10134	9789	9889	9982	10210	10255	10160	11745	12635	13735	14655
Technical Science	40817	39794	39838	39615	38350	39775	40975	44250	46720	46235	45970
Humanities	29559	30166	30247	30179	31580	31355	31065	40725	42615	44395	45060
Arts	16753	18135	19390	20300	21260	22415	23320	26465	28345	30610	31330
Other	37143	36305	36400	36607	34930	34840	33735	9990	5665	6510	7130
	251248	255260	258753	263671	265280	272660	274450	282385	292090	306355	315990

Other undergraduate	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Economics	13922	12914	12209	11079	10100	9620	10370	13180	14060	15100	12990
Medicine	8682	12529	15579	19271	21540	25325	28215	32025	40875	44035	45005
Social Sciences	8277	8596	8693	8867	9050	10665	12315	18145	26920	31805	27875
Agriculture	1293	1325	1281	1281	1110	1440	1320	1360	1250	1325	1295
Natural Science	2578	2766	2622	2555	2190	2395	2665	3880	5760	6810	6735
Law	1112	923	1138	1053	1140	690	885	1590	1550	2550	2720
Technical Science	11598	10927	10433	10420	10990	12365	13530	13550	14795	15920	14010
Humanities	2208	2271	1872	2252	2950	4010	4025	5515	7925	10040	7845
Arts	3180	3288	2805	2878	2730	3035	3680	4330	4775	5575	5910
Other	6725	6689	7207	8017	10710	15350	14805	17485	3565	1695	2195
	59575	62228	63839	67673	72510	84895	91810	111060	121475	134855	126580

Doctorate	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Economics	342	285	324	403	360	490	510	555	545	580	695
Medicine	1182	1412	1431	1451	1610	1975	2165	2245	2410	2495	2650
Social Sciences	844	974	1154	1284	1380	1730	1800	1865	1860	1975	1900
Agriculture	351	324	392	326	340	335	340	300	320	310	315
Natural Science	3680	3735	3927	3993	3920	4690	4720	4925	5110	5255	5260
Law	108	113	102	125	170	195	170	255	195	200	215
Technical Science	1919	2108	2234	2238	2160	2560	2385	2570	2695	2800	3115
Humanities	1044	1048	1196	1244	1330	1745	1720	1820	1805	1895	1985
Arts	68	84	95	114	140	180	205	310	245	275	320
Other	223	131	138	160	130	215	210	25	75	5	60
	9761	10214	10993	11338	11540	14115	14225	14870	15260	15790	16515

Master	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Economics	11032	11344	12698	12935	14180	16955	18505	21775	27100	29245	30045
Medicine	2552	3280	3360	3639	3750	4550	4700	4760	5765	6115	6685
Social Sciences	8875	9016	9800	10227	10650	13220	13145	12675	15090	17005	17625
Agriculture	753	743	754	734	820	760	835	840	945	970	985
Natural Science	4044	4199	4704	4653	5100	6025	5985	7405	8945	9710	10340

Law	1807	1812	2336	2606	2790	3585	3700	5075	5100	5585	5445
Technical Science	7730	8269	9041	9927	10350	12570	13500	14645	16335	18660	19310
Humanities	4796	5305	5930	5937	6660	7870	8455	9600	11075	11605	12525
Arts	1658	1948	2481	2510	2950	3465	3595	3855	4165	4755	5540
Other	2944	2872	2871	2669	3120	3435	3735	3380	935	25	55
	46191	48788	53975	55837	60370	72435	76155	84010	95455	103675	108555

Doctorate	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Economics	342	285	324	403	360	490	510	555	545	580	695
Medicine	1182	1412	1431	1451	1610	1975	2165	2245	2410	2495	2650
Social Sciences	844	974	1154	1284	1380	1730	1800	1865	1860	1975	1900
Agriculture	351	324	392	326	340	335	340	300	320	310	315
Natural Science	3680	3735	3927	3993	3920	4690	4720	4925	5110	5255	5260
Law	108	113	102	125	170	195	170	255	195	200	215
Technical Science	1919	2108	2234	2238	2160	2560	2385	2570	2695	2800	3115
Humanities	1044	1048	1196	1244	1330	1745	1720	1820	1805	1895	1985
Arts	68	84	95	114	140	180	205	310	245	275	320
Other	223	131	138	160	130	215	210	25	75	5	60
	9761	10214	10993	11338	11540	14115	14225	14870	15260	15790	16515