# Structural diversity in tertiary education

November 2010

## Key proposals

- An integrated long-term vision of the scale and shape of tertiary education in Australia.
- Encouragement of increased private sector participation in the provision of higher education services, including through the availability of FEE-HELP loans.
- Expansion of the role and scope of TAFE, including through provision of Commonwealth Supported Places (at two-thirds the funding rate per place for research universities), and HECS-HELP loans, for higher education diplomas and degrees.
- Exploration of opportunities for public-private co-investment in state-of-the-art learning technologies.
- Greater concentration of research and research training in universities, including internationally-benchmarked research quality thresholds for public funding of universities awarding research doctorates.
- Further incentives for inter-institutional collaboration.

## Issues and challenges

Projections of future population and tertiary education participation (see *Go8 Backgrounder 10: Future demand for higher education in Australia*) indicate that Australia needs soon to start planning for another surge in school leavers entering tertiary education from 2015, together with increased demand for greater skills deepening by adult workers. If all of the future growth in demand was to be absorbed in universities, another 24 medium-sized institutions (around 15,000 domestic students) would be needed over the next thirty years, nine of them in Queensland. But that would be an inappropriate way to accommodate the diverse mix of learners as well as an unaffordable strategy. It would also crowd universities at the undergraduate level at a time when demand for postgraduate qualifications is rising rapidly.

Hence it is necessary to find cost-effective supply solutions that respond to the increasing and increasingly diverse demand from both students and employers in a way that ensures that Australia has sufficient scale capacity in fields of education and research which are most exposed to international competition. If the structure of tertiary education in Australia is depicted in the shape of a pyramid, the challenge for public policy is to broaden the base while strengthening the top, and to accept the trade-offs involved, given the scarcity of available resources.

A renewed focus on regional Australia post the 2010 election offers opportunities to integrate the future supply of education services with a more distributed pattern of human settlement (with associated health, housing and community services), transport infrastructure investment (including fast rail), and the National Broadband (NBN) roll-out and associated information and communications services. However, this interest may lead to a range of ad hoc claims for new or expanded tertiary education institutions and services. Structural inefficiencies could result from duplication or redundancy of investment or from making investments at a scale too small to support excellence. Hence it would be prudent to envisage a comprehensive service framework to meet longer term needs.

In this context it is especially important to recognise that regions benefit most from the application of research findings, not from the performance of the research. The direct benefits that flow from the location of a small research group in a region are likely to be much less than the benefits that the region obtains from the use of research created

by a top level research team having the critical mass and facilities necessary to perform world leading research. This is true no matter what the subject of the research—whether it be agricultural improvement, social science, environmental management or health service delivery. Regions can gain a great deal from having education services that provide a local presence of people having the skills to understand and implement opportunities that research creates. Trying to build a world class research presence regionally can be much more problematic because of the level of investment necessary to attract top level researchers in the number, and with the diverse ranges of skills, necessary to make a difference. Moreover, the benefits that flow from the research such a group conducts do not remain in the region and the region will be unable to capture any of them unless it has available people with the complementary skills and aptitudes necessary to do so.

A strategy for regional investment in higher education should build on work which identifies the future outlook for selected regions, including their demographic, economic, cultural and environmental factors. Ideally, such indications of future capacities and requirements would generate a set of criteria for assessing which tertiary education supply options would best fit a region's circumstances. That is a matter for regional policy advisors and other stakeholders. This brief focuses on the supply options.

## The role of private providers

As the increased student demand will exceed the supply capacity of government alone, there will need to be a balance of public and private provision, including public-private alliances. The question may be answered, in part, either by: (a) identifying how much governments are willing to pay, and what they are prepared to pay for, and permitting private providers to find profitable niches within that structure; or (b) encouraging private sector provision initially, and targeting government funds to fill important gaps in provision. Alternatively, (c) a mixed form of provision could be conceived from the outset, varying in the public-private balance on a region-specific basis. A variant of model (c) could be a cooperative or semi-private form of community ownership with governmental co-investment.

The bottom line is that the cost to taxpayers of absorbing future demand for tertiary education will stretch fiscal capacity, even without extending a wider provision of services to regions. A much greater role for the private sector is unavoidable, but given its relatively small scale at present it cannot be relied on as the primary driver of the future system structure. This brief focuses on public supply options at lower costs to taxpayers than universities, following approach (a) above but open to opportunities for public-private co-investment.

## The new generation of on-line earning technologies

There may be particular opportunities associated with the NBN roll-out for the innovative delivery of education services, perhaps involving co-investment in new generation technologies for on-line learning, including with international partners. There are now powerful ways of providing fast access to rich information sources, and sophisticated means of interactive learning across multiple sites. Because of these emerging opportunities for more cost-effective delivery, it would make sense for the Government to commission a study into the capacity of the new educational technologies, the state of play in the provision of state-of-the-art learning services in health and other fields as well as in education, and the prospects for alliance building. The findings of such a study could inform the design of a program for encouraging modernisation of learning in Australia, initially with pilot initiatives in regions.

## An expanded role for TAFE

A significant matter requiring early attention is the relationship between the Vocational Education and Training (VET) and Higher Education sectors. These matters extend in many ways beyond the policy competence of the Go8, although several Go8 universities have significant relations with VET providers, including alliances and articulated leaning pathways. Various questions about the place of VET in the changing world of knowledge and work are under consideration in Australia. Much turns on who pays (employers, students, state governments, federal government), not least because the source of income shapes the prioritisation of purpose.

What also matters is the client group to be served (new entrants to the labour market, workers developing skills on the job, workers seeking to learn beyond the requirements of their job, people seeking workforce re-entry), not

least because of the nature of learning involved. In terms of provider sectors there is contested ground mainly at the Diploma and Advanced Diploma levels, in the market for new entrants to the labour market and for people in work or returning to work who seek to upgrade their qualifications.

As a necessary response to the increased complexity and knowledge requirements of many jobs, the dominant trend is for diploma-based occupations to become degree-based occupations, and for universities to capture ground from TAFEs, because universities are preferenced in funding arrangements. However, increasingly TAFEs are offering Higher Education qualifications (e.g. Associate Degree and Bachelor's Degree), and they have three important advantages over universities in doing so: they can more readily integrate degree programs with work-based learning (and through competency-based training arrangements, training packages, and 'skill sets', individuals can have their non-formal learning recognised and credited); they can deliver education more cheaply because they do not carry research-related overhead costs; and they are distributed more widely across Australia, especially in regional Australia. Hence it makes good educational and economic sense for the community to make fuller use of the potential of TAFE.

Accordingly, it is the Go8 view that TAFE institutions should be eligible for funding through Commonwealth Supported Places under the Higher Education Support Act. However, whereas some TAFE institutions (e.g. Holmesglen) have the capacity to mount degree programs that they could accredit as higher education awards, many smaller regional TAFE campuses do not. In those cases it would be sensible to explore the British Further Education model of TAFEs providing franchised programs, where the degree awarded is that of a partner university which is responsible for the quality of the qualification.

## Pathways for learners

It will not be possible, whatever mixes of private and public supply modes eventuate, to meet all the needs of every region within the country and neither would this be desirable especially for postgraduate education or in disciplines requiring very expensive infrastructure. Regional equity means fair access to opportunity rather than similarity of local provision. In considering the range of services that can be delivered within a region it will be essential to envisage connections with providers, including virtual providers, elsewhere that would enable people to undertake the further learning they want. Hence, an important principle to embed is that of structured learning pathways. These are typically negotiated among different providers, but there may be a role for government in facilitating particular arrangements, and the Government has a number of programs providing incentives for collaboration in teaching (e.g. Structural Adjustment Fund) and research (e.g. the Collaborative Research Network program.

## Structural options

An outline of the structure of tertiary education in a number of countries is at ***Attachment A***.

In brief, the following array of provision options is available:

- *VET/HE networks, precincts, multi-sector institutions, federated organisations, amalgamations*
- *Comprehensive doctorate awarding universities*
- *Niche doctorate awarding universities*
- *Universities, and University colleges offering degrees by coursework*
- *Polytechnics: multi-disciplinary institutions offering vocational courses at degree and sub-degree levels*
- *Community Colleges: typically offering a 2-year curriculum leading to an Associate Degree for workforce entry or transfer to a 4-year institution*
- *Specialised Institutions: focusing on specific fields of study and occupations, (e.g. performing arts)*
- *Private provider, potentially across all models over time*

Whereas the diversity of institutional types in Australia has been reduced over the last 25 years, there is considerable activity across the first of the options listed above. Multi-sector (VET + HE) institutions function predominantly in Victoria (e.g. Swinburne, Victoria and RMIT universities). Precincts of secondary schools and universities, or TAFE and

university, function in New South Wales (e.g. Nirimba, Ourimbah). Several universities have or are exploring different federated arrangements (e.g. Charles Darwin, University of Canberra), and others are forming networks (e.g. ANU with University of South Australia, Charles Sturt University, University of Southern Queensland, and Charles Darwin University).

With regard to the other options listed above, two main questions arise, neither of which have been seriously confronted by an Australian government over the last 25 years. First, is there a need for new provider types, such as community colleges and polytechnics? The available international literature does not suggest ready answers; there are no apparent correlations between binary or unitary structures and economic performance or social equity. Second, is there a need for structural differentiation within the established universities? Several countries are concentrating their funding in their best performing research universities as a means of keeping competitive pace with the scale requirements for knowledge advances in scientific fields (e.g. China, France, Germany, India, Singapore, South Korea, Vietnam), but there is no clear evidence that a system with a few world-leading universities performs better than a system of generally good quality universities.

For Australia, with its large land mass, middle-level economy and small population, and with a generally good university system, the answer to the questions above relate primarily to cost-effectiveness and governability. The risk for Australia, if it persists with a singularly undifferentiated model of university development, is that it will dissipate resources and fail to sustain the critical mass required for major breakthroughs in insights and technologies, and thereby fall behind the world leaders and fall out of the networks of advanced thinking. Failure to concentrate would itself be wasteful, as the resources devoted to supporting marginal research capacity could not be available for augmenting the capacity of non-research tertiary education institutions to cater for growth in education demand in the regions and elsewhere. Nevertheless, the policy answers cannot be derived simply from notions of what is desirable or undesirable; they will emerge from the exploration of what might be feasible. Hence the considerations below address matters of policy implementation.

## Implementation options

The five main mechanisms for driving structural diversity in Australian tertiary education are: (i) Government designation of institutional types; (ii) contests for concentration of funding for research and graduate education; (iii) negotiated mission differentiation; (iv) targeted programs to build inter-institutional collaboration; and (v) market mechanisms, including pricing flexibility and information to guide student choice, such as institutional typologies and performance comparators. Of course, some of these mechanisms could be combined.

**i. Government designation of institutional types**, with controls on authorisation to offer qualifications at different levels, is one approach to developing a differentiated tertiary education system. The California Master Plan is the best known exemplar of this model. It was developed in 1960 to cope with massification of higher education. It purposefully set boundaries on the functions of institutional types in an effort to prevent the tendency, through academic norms, to emulation of the research university model, in order to ensure diversity of provision for different learner circumstances and needs, and to contain overall costs. In the US, only 10% of higher education institutions award doctorate degrees.

In Australia, in the late 1980s, the Government decided to close entirely the binary divide at the interface of higher education qualifications, between universities and colleges of advanced education. This gave rise to 'Dawkins' universities', funded equivalently, encouraged to undertake research, and having community expectations of equivalence in degrees. The loss of institutional diversity may be seen as encouraging academic drift in the preparation for occupations requiring strong technical skills and an over-supply of generalist graduates. It would be unwise to allow further levelling with an expansion in the role of TAFE.

It would be difficult in contemporary Australian circumstances to redesignate existing universities, given that institutional types are determined mainly by the States & Territories, and they would be reluctant to wear the predictable community reaction to relegating some institutions as 'second class' or 'third class'. However, it would be appropriate and possible in expanding the role of TAFE for the Commonwealth, as funder of Higher Education programs, to set limits on the expectations of TAFE provision. Additionally, by agreement with individual States, it may be possible to develop specialisations in some TAFE institutions, such that some take a polytechnic direction, others take a community college orientation, and others develop within federated structures.

**ii. Contests for concentration of funding for research and graduate education** have been a successful mechanism in Germany from breaking out from the egalitarian gridlock. An outline of the German *Excellence Initiative* is attached to the accompanying brief on research and research training. It involved a tiered set of competitions open to all higher education institutions and assessed by international panels against transparent criteria, including track record and prospective strategies. One competition was for graduate schools in specific fields. Another competition was for innovation clusters, including industry partners. The third competition was for top up funding for excellence, limited to those which had won in both of the prior competitions.

An option for the Australian Government to consider is a competitive round along similar lines to the German *Excellence Initiative*, perhaps targeted to fields of national and regional importance, such as human settlement sustainability in major conurbations, regional cities, country towns and villages. Such a broad topic would necessarily involve a range of disciplinary and cross-disciplinary contributions, including anthropology, biology, business, demography, earth sciences, economics, energy, engineering, environment, logistics, psychology, sociology, sports management, tourism, water sciences, etc. A scoping study would be needed in order to achieve focus. The expectation and evaluative criteria would need explicitly to acknowledge that funding will flow to the institutions that can make the best contributions to the knowledge required, wherever they are located.

**iii. Negotiated mission differentiation**

The Government has leverage through its mission-based funding compacts to encourage universities to pursue distinctive missions, with each playing to its strengths. Greater differentiation will stimulate greater collaboration, and students will have wider choices than under the current model where look-alike institutions compete in the same business.

The compacts negotiations are to have regard to a university's performance in respect of targets agreed with the Commonwealth. The approach being adopted by the previous government involved mostly common performance measures. Clearer signals about mission differentiation could be sent via a more nuanced approach to target setting, whereby the selection of performance measures, as well as the level of stretch, could vary according to the circumstances and goals of different institutions.

The research-related components of compacts could also be tightened by reference to research quality benchmarks, including ERA and other internationally-benchmarked indicators.

A stronger approach to compacts would require strengthening the negotiating capacity on the Commonwealth side. At least in the transitional stage of stimulating structural reform, the Government might consider supplementing teams of departmental officers with persons who have credible experience in university leadership.

**iv. Targeted programs to build inter-institutional collaboration**

The Collaborative Research Network (CRN) program provides funding to regional universities to develop ties with other institutions having research capacity which the regional university cannot afford to replicate. Through the development of collaborative links on a 'hub & spokes' basis, teaching staff in the regional university can maintain active scholarship in their field by accessing the research facilities elsewhere and working with others there. However, the CRN program purposes need to be clarified; it should not be the purpose of the program to help a regional institutions build its research capacity at home over time, as the current program guidelines suggest, for that would be inefficient, fuel emulation, and lead to dilution rather than concentration on a national basis. Rather, the program should enable regional institutions to focus on direct contributions to innovation in their regions, drawing as necessary on the capacity of others, and developing unique capabilities.

A similar program might be considered for teaching collaboration. The Structural Adjustment Fund provides some incentives in this regard, but it is primarily for strategic repositioning of universities vulnerable to fluctuations in student demand and competitor rivalry. Students could have wider study options where their local institution (university, TAFE, polytechnic, community college or whatever) can offer them access to courses at other institutions. And that would be a cost-effective model, both for smaller institutions especially where student numbers are small in a given field, and for larger institutions where the additional enrolments can be absorbed at marginal cost or help to sustain a viable program.

**v. Market mechanisms**, including pricing flexibility and information to guide student choice, such as institutional typologies and performance comparators, can function to promote specialisation and innovation in education. The companion briefing on finance outlines the case for pricing flexibility on grounds of equity, sustainable quality, and fiscal responsibility, and options for its expression in public policy. If the future structure of provision included a greater role for private for-profit and not-for-profit providers, TAFEs offering lower cost programs, and price point differences among universities, then students would have wider choice. If well informed through public and private sources, including various ratings and rankings, they could weigh up their personal trade-offs between quality, convenience and price. By which principle of public policy would governments be legitimated to limit their options and choices?

However, competitive mechanisms by themselves, in a context of strong academic norms, can work over time to narrow rather than widen choice. There can also be market failures in the sense that some fields of importance to public good purposes may not be sustainable on the basis of student demand without government support. Hence, market mechanisms, while powerful drivers, are best used in combination with government incentives to serve particular objectives, and ameliorative mechanisms, such as compacts.

## Objectives

1. To enlarge tertiary education opportunities cost-effectively to meet the varying needs and circumstances of people living in regional Australia.
2. To diversify the provision of tertiary education in Australia to accommodate the different learning needs of a more diverse student body and the increasingly demanding and diverse needs of employers.
3. To increase selectivity and concentration of higher education research investment with the aim of sustaining research universities of international research excellence.

## Solutions

Greater variety in the provision of Australian tertiary education is necessary to respond to future growth and diversity in the youth and adult tertiary learner populations, and changes in the skill sets required in contemporary labour markets. Concurrently, greater concentration of investment is needed in Australia's leading research universities to build and sustain internationally competitive critical mass of talent and scale of infrastructure, in order to keep up and connected with the world's knowledge pace-setters.

For Australia to simultaneously expand the base of access to tertiary education in ways that well serve the varying circumstances and aspirations of students, and strengthen its internationally-competitive research performance peaks, it will be necessary to achieve a more cost-effective tertiary education system through structural reform; promote collaborative linkages across different institutional types; and provide multiple and uncomplicated pathways for learners.

Specific measures involve a combination of the following approaches:

- expansion of private provision;
- expansion of the role and provision of TAFE;
- diversification of institutional types in tertiary education provision;
- collaborative arrangements among diverse institutions;
- university mission differentiation through competitive processes, funding compacts, and targeted incentives;
- pricing flexibility to drive innovation and give students the power to make trade-offs between quality, convenience and price;
- selectivity and concentration in research funding; and
- 'hub and spokes' access arrangements for education, research, and research training.

# Attachment A

# Outlines of National Systems of Tertiary Education

## Germany

**Structure: Binary**

- 349 higher education institutions—104 universities, 189 universities of applied sciences (*Fachhochschulen*), 30 universities of applied sciences for public administration, and 71 specialised colleges.

Well established Universities of Applied Sciences (UAS) sector:

- personnel in the sector is highly qualified (about 60% of PhD degree holders)
- about 30% of all German students are enrolled in UAS
- sector offers both Bachelor and Master degrees
- in the past decades there has been an alignment between universities and UAS; switching to the Ba-Ma structure. There is however no political will to unify the binary system for good.

**Access:** Requires either the *Allgemeine Hochschulreife* (general higher education entrance qualification) or Fachgebundene Hochschulreife (higher education entrance qualification restricted to a specified field of study). Most UAS restrict the number of students admitted to certain subjects (on the basis of marks) due to capacity constraints. The university sector will allocate on the basis of selection procedures operated at either a national/regional level or institution level if the number of applicants exceeds the places available in certain subjects.

**Funding Allocation:** in 2005, 80% was considered to be basic subsidies; 16% was additional research income from research councils; 4% originated from private sources like from contract research and education.

- *Excellence Initiative* distributes additional funding to selected universities, aims to concentrate more resources in a few universities in order to build up internationally competitive and visible research centres.

## United Kingdom

**Structure: Unitary but stratified**

Merger of the polytechnic sector with the "autonomous" university sector in 1992. Former divide is clearly visible in the system with the "new" universities providing more professionally oriented programs, the degrees are less prestigious at the labour market, and the schools are also less involved in research.

**Funding Allocation:** 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.

- Only the top performing universities received research funding through the Research Assessment Exercise scheme, concentrating major research activities in some universities and forming others into teaching institutions.
- UK government links part of the funding to universities with the number of students from underrepresented groups. There are benchmarks for each universities and data on universities' success in attracting students from underrepresented groups is publicly available.

**Pathways:** Further Education Colleges, sixth-form colleges and university access courses.

**Participation:** Just under 40%, target of the UK is a 50% enrolment rate.

One significant factor behind increasing enrolment is the "professionalisation" of occupations such as nursing, with a degree-level qualification now being regarded as the norm.

**Access:** 'UCAS Tariff' points score system for reporting achievement for entry to higher education; inequity for low SES students—variable tuition fees ('top-up' fees).

Foundations degree tend to appeal to more mature students because they allow part-time studying, locally and through work-based delivery.

## Sweden

**Structure: Unitary**
Higher education is provided in five institution types: universities (*universitet*), university colleges (*högskola met vetenskapomrade*), other colleges (*overiga hogskolor*), art colleges (konstnarliga hogskolor) and other higher education institutions.

- Academic, professional and vocational programs in all types of universities. In terms of age, size, programs offered and research intensity the institutions of higher education are very varied. The ten largest higher education institutions enrol more than 75% of the total student population.

**Pathways:** Over 98% of compulsory school leavers apply for upper-secondary school (*gymnasieskolan*) and nearly all are accepted. These programs qualify students for access to higher education.

- Municipal adult education (*komvux*)
- Universities now offer preparatory courses and some offer a college program, accessible to students who do not pass university entrance requirements.

**Access:** individual institutions determine their own selection criteria.

- Admission to any undergraduate higher education program or single-subject course requires matriculating students to have either: 1) completed one of several forms of secondary school,9 or 2) reached the age of 25 and have at least 4 years of work experience on at least a half time basis (the 25/4 rule).
- No tuition fees for higher education .

**Participation:** Currently, around 30% of upper-secondary graduates are entering higher education before the age of 25. Competition for study places has increased such that the growing numbers of "mature" students enrolled in the system has come at the expense of younger applicants. As such, the government has set a target of increasing the number of upper-secondary graduates enrolling before 25 to 50%.

**Funding Allocation:** Primarily from direct state allocations and other public funds. Funding is largely distributed based on enrolment driven funding formulas and appropriations for basic research

## Finland

**Structure: Binary**
20 universities and 26 polytechnics. The mission of universities is academic with theoretical and research orientation and polytechnics prepare students for practical work. Based on the 2003 Polytechnics Act polytechnics are non-research institutions offering four or five year degree courses that are to serve regional development. Only recently the polytechnics sector started offering professional master degrees.

- Discussion now concerns mergers of universities and alliances between universities and polytechnics. The network of universities and polytechnics has to be developed in such a way that overlaps in programs are reduced and that administrative and support services will be more integrated.

**Pathways:** Post-compulsory upper secondary education comprises general and vocational education. Both forms usually take three years and qualify for higher education.

- The present legislation allows for flexible pathways leading to university education. Thus a student is eligible for university studies if the university acknowledges that he/she has sufficient knowledge and competences irrespective of his/her previous education.

**Access:** The ground rule is that the universities, their faculties or departments select their own students based on matriculation examination grades, the school-leaving certificate and/or entrance examinations.

- The annual number of applicants is three times the size of the matriculated cohort. Every year only a half of these gain entry to higher or vocational education.
- No tuition fees are charged for the basic and postgraduate degrees.

**Participation:** 73% of the relevant age group of which 43% is in university education and 30% in the polytechnics

- The drop-out rates in university education are relatively low with 4.7%, in polytechnics this is 6.4%

**Funding:** All the 20 universities in Finland are state-owned and mostly financed from the state budget.

- Funds granted by the Ministry of Education to universities comprise core funding, project funding and performance-based funding. Core-funding is intended for instruction and research. Direct government funding covers about 64% of university budgets.
- Under polytechnics legislation, the government provides 57% of the core funding and local authorities the remaining 43%.

## Denmark

**Structure: Diversified**

Four main types of higher education institutions, within the responsibility of three different Ministries, including:

- 8 universities which conduct research and offer research-based undergraduate and postgraduate programs (Bachelor, Master and PhD)
- the University College sector consists of 8 university colleges (centres for higher education) offering undergraduate programs (Professional Bachelor and Diploma programs)
- 10 Academies of Professional Higher Education (*erhvervsakademier*) offering professional programs usually of 2 years duration.
- 20 other institutions like the Royal Academy of Fine Arts, the Music Academies, and the Schools of Architecture and Librarianship.

Colleges and universities and research institutes cooperate closely.

**Funding Allocation:** Globalisation strategy to develop a world class educational system, strong, innovative and entrepreneurial research for a high national level of change and innovation. The strategy also included more basic funds to be allocated through competitive and performance based mechanisms.

## Austria

**Structure: Diversified**

- Four types of higher education institutions: 22 public universities, 20 Fachhochschulen as well as 11 private universities and 17 teacher training colleges (*Pädagogische Hochschulen*).
- Fachhochschulen provide programs closely linked to private business demands. The sector offers diploma, Bachelor and Master degrees. The research role is still small compared to the university sector, but the trend is towards increasing this role. Fachhochschulen and private universities are under strict accreditation regulations.

**Funding Allocation:** Funding from federal government based on 3-annual performance contracts with performance areas like HR development, research, study programs, continuing education, social goals, internationalisation, inter-university cooperation and specific fields. In an intellectual capital report universities report on their achievements.

**Pathways:** Students completing secondary academic schools (*Allgemein bildende höhere Schule or Berufsbildende Höhere Schule*) receive a 'Matura' qualification and are eligible to enter the higher/tertiary education sector.

- Persons who did not take the secondary school-leaving examination have the possibility of taking the university entrance qualification examination (*Studienberechtigungsprüfung*) for a specific study course and/or a group of studies.

**Access:** The *Fachhochschulen* are able to select students and to restrict access. In the university sector there is a policy of open access however universities want the right to restrict access in order to ensure the quality of HE study programs.

- In June 2009 universities have the opportunities to restrict access to Master and PhD programs with qualitative quota. Also the bachelor studies have introduced a starter program of 1 or 2 semesters.
- High drop-out rate.
- Tuition fees introduced in 2001/02.

## Belgium (*Flanders*)

**Structure: Binary**
6 universities and 22 university colleges (*hogescholen*). In addition there are 2 theological institutions, 4 postgraduate training institutions, 5 non-statutory registered institutions, and 1 transnational university. The non-university sector can award both academic university-level degrees and vocational degrees. The academic degrees (academic Bachelor and Master) are issued through a formal association with a university.

- Since 2004 there are Associations of universities and university colleges that entail structural co-operations between one university and several colleges. One of the goals is to 'upgrade' the academic degrees of the non-university sector and by 2012 these degrees will be turned into university degrees.
- Universities enrol about 38% of bachelor and master students, university colleges 62%.

**Access:** Entry restrictions are limited. Since the academic year 2008-09 higher education institutions can refuse to take students that have not shown significant study progress.

**Participation:** 60% of the 18-year olds attending HE. Graduation rates however are low.

- Tuition fees are low and account for about 7% of the block grant allocated to university colleges and 4% in the case of universities.

## The United States of America

### The Carnegie Classification (2005)

**Structure: Diversified**
Great variety of institutions and the level of programs in the system. There is no legal distinction between "university level" and "non-university level" higher education. The level of studies is defined by the level of qualification offered in a specific program rather than by type of institution offering it.

- From the 6,479 postsecondary institutions, 4,182 are non-degree institutions. Of the degree-granting higher education institutions, some 1,732 award only the associate degree plus sub-bachelor's certificates and diplomas; 702 award only the bachelor's degree; 1,094 award degrees and certificates beyond the bachelor's degree but not the research doctorate; and 654 institutions award the research doctorate.

**Carnegie Classifications (2005)**

- Doctoral/Research Universities
  - Research Universities (RU/VH) (very high research activity)
  - Research Universities (RU/H) (high research activity)
  - Doctoral/Research Universities (DRU)
- Master's Colleges and Universities
  - Master's Colleges and Universities (Master's/L) (Larger Programs - awarding at least 200 Masters-level degrees)
  - Master's Colleges and Universities (Master's/M) (Medium Programs - awarding 50-150 Masters level degrees)
  - Master's Colleges and Universities (Master's/S) (Smaller Programs - awarding fewer than 50 Masters level degrees)
- Baccalaureate Colleges
- Associate's Colleges

- Specialized Institutions:
  - Theological seminaries and other specialized faith-related institutions
  - Medical schools and medical centers
  - Other separate health profession schools
  - Schools of engineering and technology
  - Schools of business and management
  - Schools of art, music, and design
  - Schools of law
  - Teachers colleges
  - Other specialized institutions
- Tribal Colleges and Universities

**Participation:** High enrolment numbers; high drop-out rate. Among worst performer in terms of tertiary graduates employed in skilled jobs (63%).

- Community colleges by far enrol most students.

## The Netherlands

**Structure: Binary**
University sector with the HBO-sector (*HBO-Hoger Beroepsonderwijs*). 13 universities and 42 government funded *hogescholen*. Higher education also provided through the Open University

**Pathways:** VWO and HAVO are part of the second tier of secondary education which prepare students for higher education.

**Access:** By law admission to universities is open for students with a pre-university school-leaving certificate (VWO) or a *hogescholen propaedeutic* certificate. Admission is also open for all students who graduated at a *hogeschool*. The only limitation to this "open system" is the system of *numerus fixus*, either based on labour market considerations or on the total capacity for a program at the system level.

**Participation:** More than 560,000 students in 2007; 36% of 18-25 year olds; objective for 50% of the labour force aged 25 to 44 to have at least a Bachelor degree by 2050; high graduation rate

**Funding Allocation:** Income of universities and *hogescholen* derives from three so-called *flows of funds* as well as student tuition fees. The majority of funding comes from the *first flow of funds* which are block grants allocated in proportion to the teaching, research and related activities of the institutions. The *second flow of funds* consists of projects-based public payments for research, allocated by the Dutch Organisation for Scientific Research (NOW) and the Royal Netherlands Academy of Science (KNAW). The third flow of funds concerns income from contract research and contract teaching.