Chapter one – a Perspective on a Decade of Change

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This chapter provides an introduction to the dramatic and far-reaching changes that occurred in Australian higher education throughout the decade of the 1990s. These changes touched numerous aspects of Commonwealth higher education policy and university life. They also consolidated and extended the substantial reforms of the late 1980s. Particularly important were:

- the substantial increase in total student enrolments with the achievement of greater access to university, and the development of stronger and more comprehensive institutions;
- a more market-oriented and competitive regulatory environment, with less institutional dependence on government operating grants and substantial increases in revenue generated by institutions, including student fees, particularly from international students;
- a more student focused approach to course offerings and student learning, and new access and equity initiatives;
- major expansion in research activity and research training, with closer university-industry research links, and an increased emphasis on competition in research allocations and in monitoring outputs;
- new quality assurance initiatives, improved monitoring and evaluation mechanisms, and a more international orientation; and
- within universities, a more corporatist and entrepreneurial approach to institutional management and governance.

To a large extent, these broad directions of change corresponded closely with those experienced over the same period by many other developed nations.

The various changes in Australian higher education were driven by a number of influences. Increasing retention rates in secondary schools and labour market changes, for example, contributed significantly to maintaining strong demand for student places, both from school leavers and adults. Changing views about international economic competitiveness, the need for micro-economic reform and broadening the country's export base led to an increased emphasis on participation in education and training, while the search for new export market niches influenced directions for research policy and funding. Developments in information and communications technologies facilitated changes in both university teaching and administration.

In a number of cases, Australian developments were influenced by new ideas developed elsewhere about the place of higher education in modern economies and about higher education management. Examples include the adoption of new quality assurance processes, experimentation with performance indicators, and different regulatory mechanisms for the control and coordination of universities. At the same time, Australia became an acknowledged leader in the implementation of new directions for higher education as well as for public sector management more generally. Of particular importance was the application to higher education of new ideas about public sector management, especially relating to competition and the application of market mechanisms.

In turn, the Commonwealth responded to these various influences, initiating a series of reforms commencing with those announced by John Dawkins as Minister for Employment, Education and Training in his Green Paper (Dawkins 1987) and White Paper (Dawkins 1988) on higher education. In summary, these reforms resulted in:

- the replacement of the binary system by a unified national system of higher education;
- a reduction in the number of separate universities and their consolidation to form larger units through mergers;
- a more competitive approach to funding;
- increased research emphasis on topics of national importance;
- changed management practices and more flexible staffing policies;
- funding support to facilitate major increases in student enrolments; and
- the closure of the Commonwealth Tertiary Education Commission, with responsibility for funding transferred to the Department of Employment, Education and Training.

These were followed by the introduction of the Higher Education Contribution Scheme, which re-introduced a student financial contribution, but in the form of an income contingent loan recovered through the tax system, and policies to allow universities to charge overseas students on a full cost recovery basis.

Throughout the 1990s these reform efforts were continued, consolidated and expanded. Perhaps the most important and far-reaching developments were the implementation of policies leading to substantial growth in earned income by universities and to the attraction of large numbers of international students.

At the same time, following bedding-down of the major institutional mergers in the late 1980s and early 1990s, the overall institutional landscape remained remarkably stable throughout the 1990s, except for the break-up of the federated University of New England; the more recent recognition of the Sunshine Coast University College as a full university; the founding of the University of Notre Dame Australia; and the major expansion of private higher education providers. Establishment of numerous additional campuses and study centres dramatically increased the number of geographic sites used for course delivery and to support off-campus study and flexible learning. This, in turn, played an important role in extending access. Access rates, however, remain of considerable concern for particular groups, especially Indigenous students, students from low socio-economic status backgrounds and students from rural and isolated areas. Retention rates for Indigenous students and those from isolated areas are also a concern.

This chapter first outlines the external forces that acted as drivers for change – including economic and public sector reform; globalisation and international links; changes in information and communications technology; demographic changes and cross-sectoral developments – before considering some of the main Commonwealth policy initiatives. In relation to Commonwealth policy changes, the discussion concentrates particularly on growth in self-earned income by universities; changing relations between government and universities; funding trends and funding mechanisms; quality assurance and performance indicators; research and research training; and an increasingly international orientation. This leads on to an account of the main changes in the institutional landscape, paying particular attention to institutional location and type; system growth; private providers; and changes in university management and governance. A final section is concerned with links between the higher education sector and society, looking particularly at participation and completion rates; the production of graduates; the stock of graduates in the workforce; starting salaries for graduates and their employment; access and equity, and research output and impact.

1.1 External forces

A number of forces external to the higher education system influenced developments throughout the 1990s. Particularly important were economic and public sector reform,

globalisation and pressures for increased international links, changes in information and communications technology, demographic trends, and cross-sectoral education developments.

Economic and Public Sector Reform

Traditionally, the Australian economy depended heavily on farm products for export income and, especially in the early post-war years, secondary and service industries developed behind walls of relatively high tariff protection. In the 1970s, the first major efforts were made to reverse this approach and lower tariff barriers. In the 1980s, this reform effort increased in urgency when a number of traditionally strong export commodities experienced difficulty, resulting in strong pressure for macroeconomic and sectoral policies designed to integrate Australia more competitively into the world economy.

The new economic directions changed the role of higher education to the extent that human capital investment came to be seen as instrumental to economic reform. The 1988 White Paper on higher education expressed this as follows:

> *The society we want cannot be achieved without a strong economic base. In Australia, this now requires a greatly increased export income, a far more favourable balance of trade than at present and a considerable reduction in our external debt. It also requires a shift in the traditional profile of our economic activity. Our industry is increasingly faced with rapidly changing international markets in which success depends on, among other things, the conceptual, creative and technical skills of the labour force, the ability to innovate and be entrepreneurial.*
> (Dawkins, 1988, p. 6)

Economic reform continued throughout the 1990s with further reductions in tariffs, new efforts to increase competition in services, and efforts to stimulate service industries and specialised manufacturing. In the late 1990s, economic growth remained strong, despite major economic difficulties experienced by a number of Asian neighbours while unemployment rates were reduced substantially to levels well below those experienced for over a decade.

Closely associated with changes in economic policy were new ideas in public sector management that became common in Australia from the mid-1980s (Halligan and Power 1992; and Wanna et al. 1992). These ideas were quickly taken up in various government reports and in reform efforts at both Federal and State levels. Some ideas were generated locally while others came from academic and scholarly literature (e.g. Ferlie et al. 1996) or from monitoring the experience of other countries. Others still came via international bodies, such as the Organisation for Economic Development and Co-operation (OECD) in which Australian ministers and officials played active roles.

Participation by Australia in the OECD and the ideas it generated significantly influenced higher education reform in Australia. A particularly influential report entitled *Universities Under Scrutiny* (OECD 1987a), had an impact on the direction of reform under Minister Dawkins, whose Green Paper (Dawkins 1987, p iii) quoted this publication in its introduction. *Universities under Scrutiny* had emerged from the OECD's concern about the changing environment for higher education, particularly the changing economic conditions which had led first to increased affluence and in turn to increased student demand, but then in the late 1970s to recession, high inflation and high unemployment following major oil price rises. The final section of this publication drew attention particularly to the need for 'career-oriented courses of study', greater public accountability, new forms of university governance and for universities to be more closely involved with their communities – themes all taken up in the Green Paper.

Perhaps of greater importance from the perspective of higher education, was a stream of more general reports from the OECD dealing with economic performance and public sector reform. A

publication entitled, *Structural Adjustment and Economic Performance* (OECD, 1987b), for example, addressed shortfalls in the economic performance of countries belonging to the OECD and called for structural changes in national economies in order to exploit new opportunities and achieve growth. Its analysis centred particularly on the policies of governments, their effects on efficiency and the need for microeconomic reform, while its recommendations called for programs to 'centre on action to increase competition in product markets, to strengthen the responsiveness of factor markets, and to secure increased efficiency and effectiveness in the public sector' (OECD, 1987b, p. 34).

Eight years later another influential report from the OECD reviewed public sector reform in various member countries, explaining this development as follows:

> *A number of key factors have come together to make reform a burning issue. Key among these are: the development of a global market place, which highlighted the impact of government activities on national competitiveness; a perception that public sector performance was inferior to that of the private sector; limits to future growth in the public sector, given budget deficits and high levels of public debt; a lowering of expectations about government's ability to solve economic and societal problems by traditional remedies; citizens' demands for improved responsiveness, choice and quality of service; and demands from public sector staff. Put together, these pressures have resulted in a reappraisal of the rationale for government intervention and re-examination of public sector management and performance.*
> (OECD, 1995, p. 19)

Significantly, this quotation was used at the beginning of the Coalition Government's 1996 report of its National Commission of Audit which noted that 'these same pressures apply in Australia and require a fundamental re-think of where and how governments are involved in the community's activities' (National Commission of Audit 1996, p. 9).

Key themes from the new ideas about public sector reform had already appeared in the reports of various Commonwealth Government bodies and enquiries, urging extension of market competition throughout the economy, including in areas such as health, welfare and education. The most influential of these was the report of a committee on national competition policy (Hilmer 1993) and various reports from the Industry Commission (e.g. 1991, 1995), but the same kind of arguments were also found in a review of Commonwealth-State service provision (Scales 1995) and the Economic Planning Advisory Council's work on education (Clare and Johnson 1993). These various documents shared common assumptions and a common set of prescriptions. They were underpinned by claims about the virtues of competition, which was seen as improving performance and productivity, and leading to improved customer service. According to the Hilmer report, 'enhanced competition' is an unambiguous good that improves efficiency and productivity, reduces the price for services and makes the economy internationally competitive (Hilmer 1993).

The first new public management ideas applied to higher education in Australia were simply ideas about efficiency and effectiveness, the application of improved management practices and the use of performance indicators for accountability purposes (Commonwealth Tertiary Education Commission 1986). However from the early 1990s, the emphasis changed, with the introduction of the concepts of competition and contestability, more commonly referred to as market forces (Harman 2000a). The important distinction to draw here, as far as higher education is concerned, is between these new concepts, on the one hand, and the traditional models based on coordination, collaboration and planned service provision, on the other. But as Phillips has noted,

> *…these two approaches are not entirely mutually exclusive – competitive elements can exist within a planned policy framework, and elements of planning can exist within a*

> *competitive environment. Indeed both approaches can be identified in higher education policy over many years. There is however a discernible shift occurring in the balance, a shift inexorably towards competition as the basic policy rationale.*
> (Phillips 1997, p. 222)

Globalisation and International Links

Globalisation and the development of new forms of international linkages between nations and between professionals had major impacts not only on the delivery of education and training services but also on knowledge itself and how universities define their missions and go about their work.

At its minimum, globalisation refers to opening up of markets to increased competition and to the free flow of trade, technology and finance across national borders. It also refers to the increased flow of personnel between countries, to international regional cooperation and treaties, and to developments in communications technology, particularly satellite communications and more recently the Internet. These changes have had profound effects, such as the opening of formerly protected domestic industries to international competition, resulting in such industries having to shape themselves increasingly to meet the regulations and requirements of other countries. According to Global Alliance Limited, in a 1997 study of Australian higher education in the era of 'mass customisation', higher education is already being affected by these changes and may well be moving towards a global free market in which higher education providers will need to search out specialist markets internationally (Global Alliance 1997, pp. 77-85).

Globalisation, however, also can be defined in a wider and broader sense to refer to systems and relationships that are practised beyond the local and national dimension at continental, meta-nation regional and world levels. These relationships are technological, cultural and political as well as economic, and are expressed in flows of ideas, images, and people, as well as flows of money and goods. In this broader sense, globalisation means simply becoming more global.

Globalisation in both its narrow and broader conception is not a new phenomenon. Trade across national borders goes back to early civilisations, while the movement of ideas was facilitated by traders and wandering scholars. Since the medieval period, universities in the Anglo-European tradition have been part of larger cross-national networks facilitating the movement of teachers and students.

But in recent years, global relationships have accelerated to a marked degree, driven particularly by improved transport and communications, the increased application of new information technology to business and commerce, rising standards of living, the new role of international finance and multinational companies, and the impact of international organisations such as the World Trade Organisation. Particularly important for the future, as far as higher education is concerned, is the General Agreement on Trade in Services (GATS) and its potential to affect the emerging system of global trade in services.

Globalisation has produced a variety of results. Increased world trade has benefited many suppliers and consumers, and has facilitated the transfer and adoption of modern technology. On the other hand, there are concerns about the cultural dominance of major nations and strong and multi-faceted influences towards international cultural convergence. With respect to higher education, the increased movement of skilled labour between countries has produced increased pressure for reciprocal recognition of academic and professional qualifications. Universities have become increasingly part of world markets in international education and intellectual property. Global technologies enable instant data transfer and facilitate the establishment of much larger sets of international collaborations in research, publishing and course delivery.

Without doubt, international trade agreements have the potential to reset national education policy and provision. According to two Australian scholars, higher education 'has become irretrievably communications heavy, travel based, marketing dependent' with constant international engagement being essential in order to sustain a place in the forefront of academic fields' (Marginson and Considine 2000, p. 48).

The pressure for increased recognition of qualifications is a good example of the impact of globalisation on Australian higher education. This pressure has prompted Australia to ratify various international recognition conventions and take more seriously its own quality assurance mechanisms. The two key conventions which Australia has ratified are the United Nations Educational, Scientific and Cultural Organisation (UNESCO) Regional Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in Asia and the Pacific and the more recent UNESCO/Council of Europe Convention on the Recognition of Qualifications concerning Higher Education in the European region (known as the Lisbon Convention) While the requirements of these conventions may not be particularly onerous, they do require signatory countries to provide pathways for the recognition of overseas qualifications and supply detailed information on local higher education qualifications and their standing. According to the Lisbon Convention, each signatory country is required to provide adequate information on any institution belonging to its higher education system and on any program operated by these institutions with a view 'to enabling competent authorities of other Parties to ascertain the quality of the qualifications issued by these institutions' (Council of Europe 1997, Article VIII.1). With many countries belonging to the OECD establishing more rigorous national systems of quality assurance, future international conventions can be expected to require signatories to have in place even more rigorous national systems of quality assurance.

Changes in Information and Communications Technology

Much has been written about recent developments in information and communications technology and their impact on economies and societies in both developed and developing countries. In many respects, these developments have heightened the divide between rich and poor countries and between the major developers and manufacturers of technology and those countries with little or no involvement. Within countries, they have sharpened the divide between different social groups and geographic regions. Internationally, the new technologies have increased the dominance of the English language as the main vehicle of international communications and trade. This, in turn, has provided countries such as Australia with major advantages in marketing higher education internationally.

For higher education, the overall impact of the new technologies has been profound, with their application fundamentally changing many aspects of research activities, teaching and course delivery, administration and how potential clients access information (Global Alliance 1997). Developments in electronic communications, for example, have enabled higher education providers to offer courses using new forms of distance education, both domestically and in other countries. Electronic communications are providing students with access to new forms of educational resources. Now in many disciplines students may use resources available on the Web as much as traditional library resources. New electronic communications are enabling overseas higher education competitors to provide education services within Australia as well as targeting Australian overseas education markets, especially in Asia. All this, in turn, is creating pressures for concerted action by universities and government agencies within and across countries to improve quality assurance mechanisms and controls over new providers. Administrative work within universities has been substantially transformed, not only replacing routine tasks formerly performed by people but enabling work to be done in ways that previously was impossible. Replacement of routine administration by computers has created new classes of specialists and has committed universities to the need to upgrade both hardware and software on a regular basis, usually at considerable expense.

New technological developments have facilitated the growth of transnational education, on-line education, and collaborative education. While these identify distinct emphases, their actual characteristics intersect with a single educational activity often taking two or more of these forms. For example, on-line education may or may not be transnational while transnational education may or may not be collaborative.

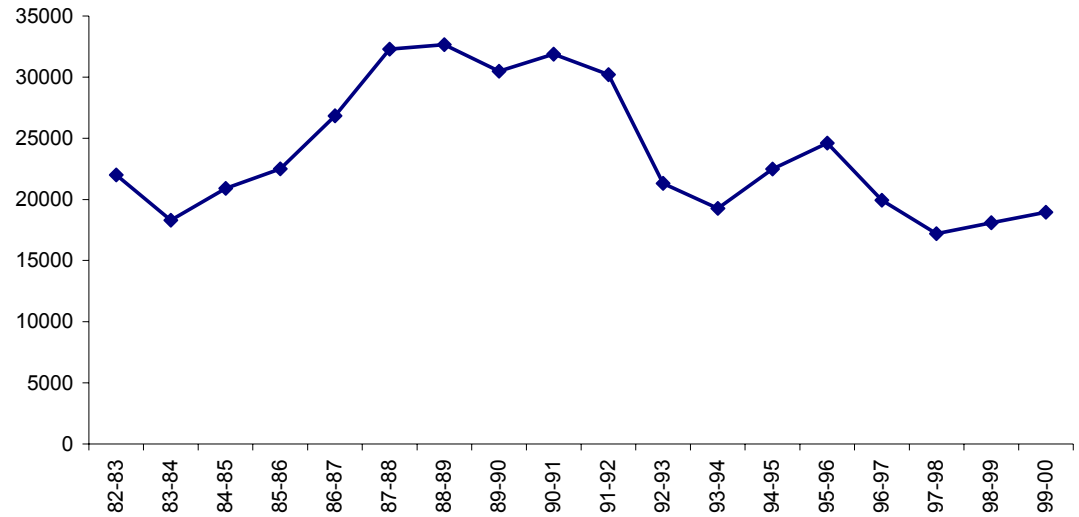
Demographic Changes

Demographic changes inevitably had major impacts on universities and government policy. For example, increases in Australia's population from around 17 million at the beginning of the last decade to over 19 million in 2000, combined with high retention rates in secondary schooling and a growing demand for a better educated workforce, have provided strong and continuing demand for higher education student places.

The growth in Australia's population over the past decade resulted from a combination of natural increase and immigration. Of these two, natural increase was the major factor driving population growth for the past 20 years. Between 2000 and 2001, Australia's population grew by 1.2 per cent. Some 45 per cent of this growth was due to net overseas migration and 55 per cent to natural increase. Over the past two decades, natural increase has not varied greatly, in absolute terms, from year to year, although it is projected to decline steadily over the next 30 years. In 2000, the total fertility rate was 1.77 births per woman. In contrast, net overseas migration fluctuated markedly and only in three years[1] over the past 20 years did immigration exceed natural increase. Through the 1990s net annual migration fell from 124,000 in 1990 to 30,000 in 1993 before rising to a peak of 104,100 in 1996. It then fell to between 85,000 and 87,000 before rising to 109,700 in 2001 (Department of Immigration and Multicultural Affairs and Indigenous Affairs 2001, pp. 3-4).

At the end of the decade, around 24 per cent of Australians were born overseas, around the same proportion as in 1901. Migrants born in English speaking countries represented around nine per cent of the population and those born in non-English speaking countries 14 per cent. The number of young people migrating to Australia from non-English speaking countries peaked in the late 1980s and early 1990s and this had some effect on the participation of people from non-English speaking backgrounds in higher education over the past decade (Figure 1.1).

Figure 1.1 Arrivals of 10-29 year olds from non-English speaking countries



Source: Department of Immigration and Multicultural and Indigenous Affairs

[1] These three years were 1981-82, 1987-88, and 1988-89.

Migration has resulted in a more diverse population and in some cases this has created particular challenges for educational institutions in dealing with students without satisfactory levels of English language competence. For higher education, this situation was sometimes compounded by difficulties experienced by some international students, especially with spoken English.

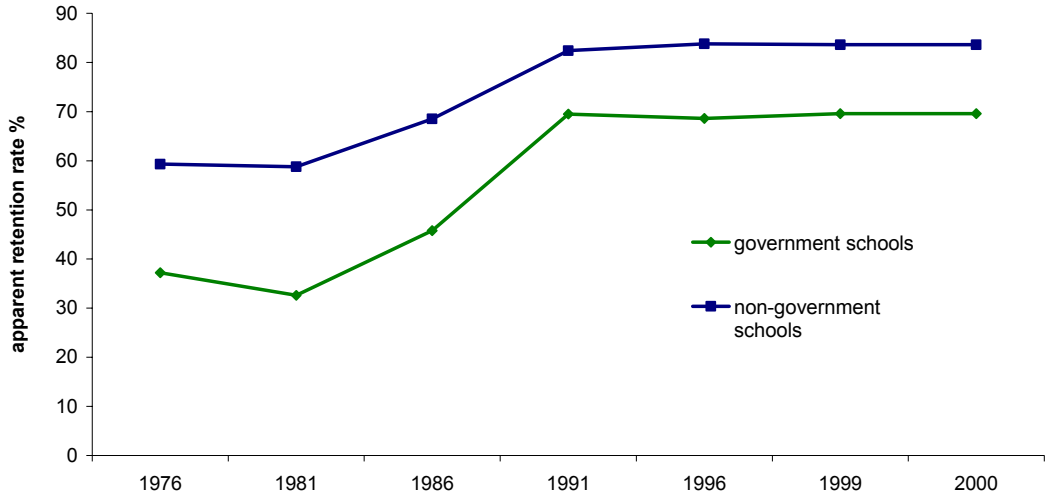
The highest rates of population growth over the past decade were in the Northern Territory, Queensland and Western Australia, while New South Wales remained the most populous State. Major cities increased their share of the population at the expense of smaller country towns and rural areas. The main concentrations of social inequality are in major urban areas, although social and economic disadvantage is over-represented in smaller towns and geographically isolated communities.

Australia's population aged 0-14 years fell over the decade; it was 21.5 per cent in 1995 and 20.5 in 2000. Over the same period, the population aged 65 years and over increased from 11.9 per cent to 12.3 per cent. These changes, in turn, affected the potential pool of school leavers moving to higher education as well as the need for increased government outlays related to providing services for those 65 years and over. The school leaver feeder population for higher education is likely to grow modestly until 2010 after which there will be a slow, long-term decline. Like most developed countries, Australia's population structure is ageing, with its largest group being 30-39 year olds and fewer people each year successively in younger age groups. In the last five years of the past decade, the median aged increased from 33.7 to 35.2 years.

Higher education demand is affected especially by those in the 15 to 24 year age group and by secondary school retention rates. Year 10 to Year 12 apparent retention rates[2] increased considerably in the decades leading up to the 1990s. Retention rates were higher for female students and students in non-government schools (Figure 1.2).

[2] Care should be taken in interpreting apparent retention rates since various factors affecting their calculation have not been taken into account. At the national level these include the effects of students who repeat a year of education, migration, and changing characteristics of the school population, such as the growing number of full fee-paying overseas students. Retention rates vary greatly between States and Territories. For example, in the year 7/8 to Year 12 apparent retention rates for males and females in the ACT in 2000 were 84.9% and 86.3% respectively, for the Northern Territory they were 42.5% and 57% respectively.

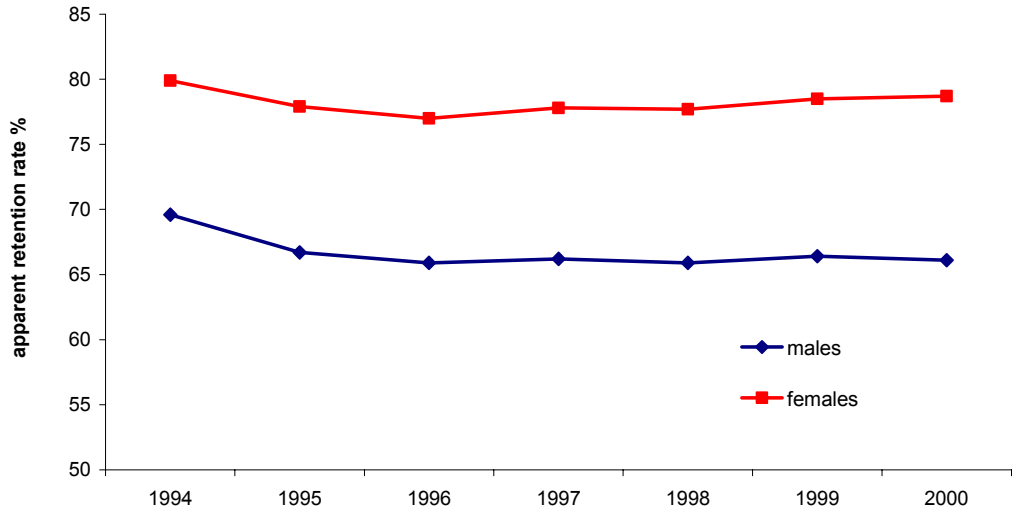
Figure 1.2 Apparent Retention Rates from Year 10 to Year 12, and category of school, 1976-2000



Source; Australian Bureau of Statistics, *Schools* 2001, Cat. No. 4221.0

The retention rate of secondary school students from Years 7/8 to Year 12 varied somewhat over the decade, it was 71.3 in 1991 and 73.4 per cent in 2001. The fact that secondary school retention rates are about 10 per cent lower for males helps to explain the lower participation rates of males in higher education (Figure 1.3).

Figure 1.3 Apparent Retention Rates from Year 7/8 to Year 12, by sex, 1994-2000



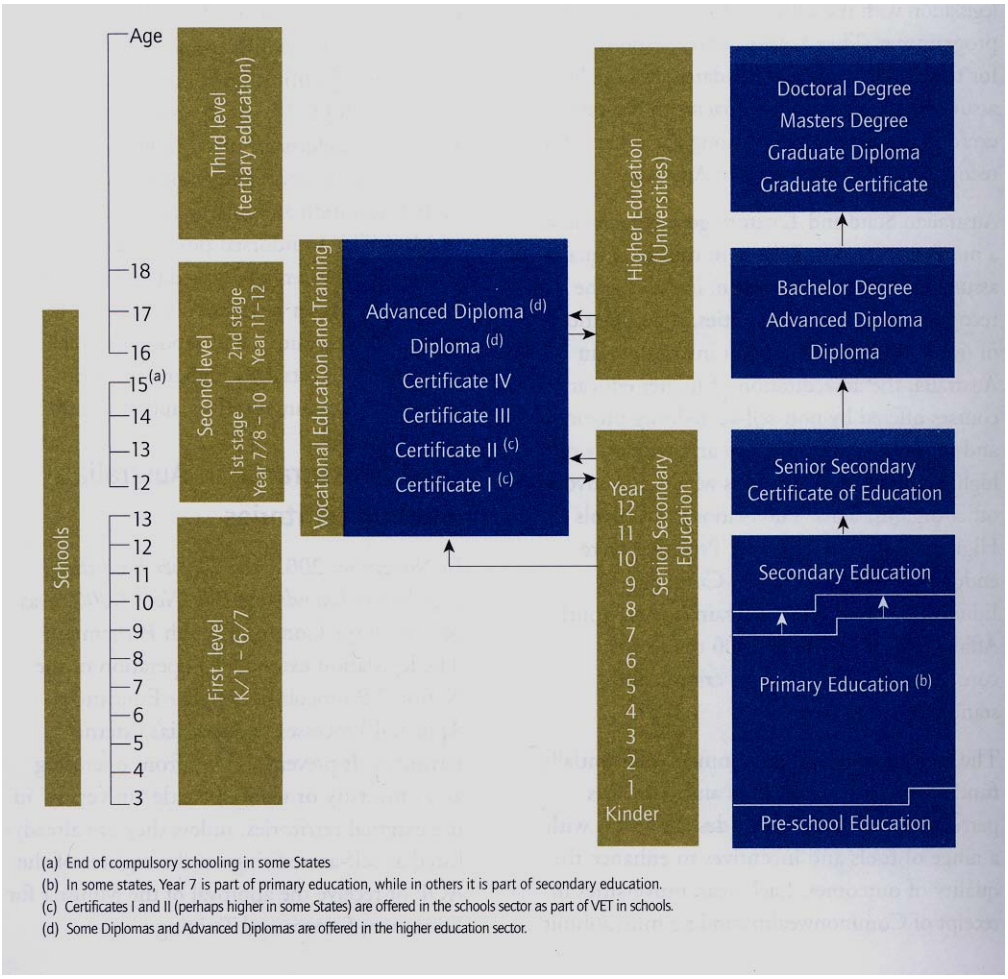
Source: Australian Bureau of Statistics, *Schools* 2001, Cat. No. 4221.0, 1999, 2000

Cross Sectoral Education Developments

Throughout the 1990s, the Commonwealth sought to facilitate complementarity and cooperation between the higher education and the vocational education and training sectors. This policy direction was facilitated with the establishment of the Ministerial Council on Education, Employment, Training and Youth Affairs which determines national policy and priorities, strategic directions, funding arrangements and planning processes for vocational education and

training on the advice of the Australian National Training Authority. The relationship between the three sectors that make up the Australian education system is shown in Figure 1.4.

Figure 1.4 Structure of the Australian education system and qualifications awarded by each sector



Source: Department of Education, Science and Training

Technical and further education (TAFE) colleges, primarily funded and administered by State and Territory governments, are the main providers of vocational education and training courses, although other providers include employers (especially in the case of apprenticeships and the upgrading of vocational and professional skills), professional associations, industry associations, adult and community education organisations and private commercial providers. Between 1990 and 1999 the total number of vocational education and training students increased from 966,800 to 1,647,200 – an increase of over 70 per cent. Over the same period, total higher education student numbers increased by 41 per cent.

Various Commonwealth and State initiatives and institutional efforts resulted in the establishment of more diverse pathways from the compulsory years of schooling to both work and further education and training. Post school institutions introduced more flexible means of delivery to enable students to take studies in conjunction with other commitments. Off-campus programs and flexible learning in particular reduced attendance requirements at tertiary institutions. The traditional roles of particular institutions have been broadened with several institutions offering degrees while some higher education institutions offer vocational education and training courses.

A number of combined higher education and technical and further education institutions now operate in multi-campus environments while additional multi-sector facilities provide technical and further education, higher education and the senior years of schooling on the one campus. These new cross-sectoral institutions include those that operate primarily on an independent stand-alone basis in regional areas, and those that form parts of networks with a university in a metropolitan area (Shoemaker 2000, p. xix).

Increased articulation between sectors not only recognises the value of skills obtained but also allows for concurrent studies. In some instances, senior secondary students are able not only to complete schooling but also obtain a vocational certificate. With support from State and Territory governments and industry associations, a series of reforms helped specify and standardise the vocational qualifications required for entry into the major industry sectors and to the labour market, while other efforts resulted in a qualifications framework covering both vocational education and training and higher education.

Students with post-school attainment have been returning in increasing numbers to further study, either to higher education or the vocational education and training sector. The largest increases over the decade were amongst those 25 to 64 years of age (Table 1.1). The number of students enrolled in vocational education and training courses who held a bachelors degree or a higher qualification (Australian Bureau of Statistics 2000a, p. 95) almost doubled. Another noticeable trend has been the increasing proportion of students entering higher education who already hold a higher education award.

Table 1.1 Prior Educational Attainment of Tertiary Students, 1989 and 1999

	Bachelor degree or higher		**Other post-School qualification**		**Total with post-school qualification**	
	%	%	%	%	%	%
Currently attending/ Age group (years)	**1989**	**1999**	**1989**	**1999**	**1989**	**1999**
VET						
20-24 years	3.4	9.2	27.0	21.6	30.4	30.8
25-64 years	12.6	22.0	47.2	38.1	59.8	60.1
Total	10.1	18.3	41.6	33.3	51.7	51.7
Higher Education						
20-24 years	12.6	17.7	11.5	9.4	24.1	27.2
25-64 years	40.7	51.9	34.4	22.9	75.1	74.8
Total	28.1	36.5	24.1	16.9	52.3	53.4
Total Tertiary						
10-24 years	8.6	14.6	18.3	14.0	26.8	28.5
25-64 years	23.2	35.6	42.3	31.2	65.5	66.8
Total	18.1	27.8	33.9	24.8	51.9	52.6

Source: Australian Bureau of Statistics (2000), *Australian Social Trends 2000*, Canberra, p.95.

1.2 Policy Changes

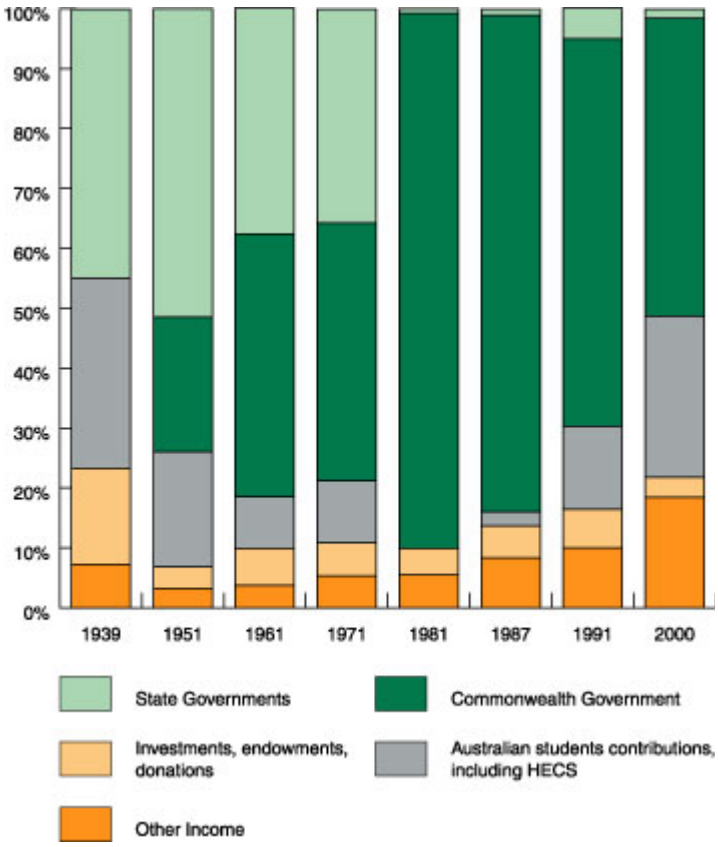
Key policy changes have had a substantial impact, and have helped transform the overall direction and operation of universities. Of particular importance have been policies related to growth in self-earned income by universities, changed relationships between universities and government, new approaches to funding, increased monitoring of performance and new quality assurance mechanisms, new directions for research and research training, and facilitation and encouragement of international student enrolments.

Growth of self-earned income by universities

The most dramatic and far-reaching change through the 1990s relates to policies and incentives leading to substantial growth in earned income by universities. This has fundamentally changed the operation of universities and their relationships with government. Universities have not only become increasingly self-sufficient financially but the structural relations with government have changed from being academic referenced in a traditional form to being state referenced and then to being market referenced. The extent of these changes, first pulling away from traditional academic orientations and then pushing towards stronger market influences, were anticipated by few when the major reforms of the late 1980s commenced.

Two main sets of drivers have been influential in this change of policy direction. The first were important push factors, including a shift from government support to government assistance and from tight to loose regulation, encouraging universities to be more responsive to varying student needs and diversifying their course offerings so as to widen user choice. The second were pull factors, including changing demand for higher education. While domestic student demand has largely levelled out, international student demand has continued to increase. Associated with this at both undergraduate and postgraduate levels has been demand for further course diversification with the growth of the knowledge economy, facilitated by the expanding capacity of communications and information technology on a global basis. Substantial financial rewards are now available from the commodification of knowledge and the commercialisation of academic work.

Figure 1.5 University income by Source 1939-2000

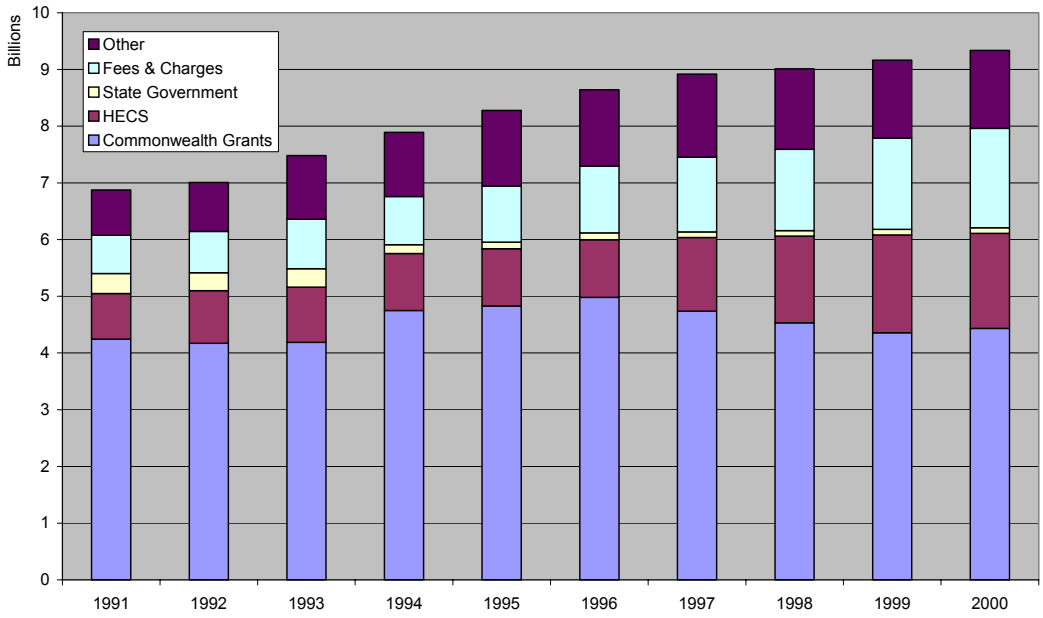


Source: Department of Education, Science and Training Statistical Collection

The proportion of income received by universities from sources such as the Commonwealth and State and Territory governments, fees and investments has varied considerably over the past sixty years (Figure 1.5).

The amount of income received by universities from non-government sources increased over the past decade (Figure 1.6) and that share is projected to grow. As a consequence, change is being increasingly initiated by the universities themselves as they redesign their services, capturing new markets, commercialising knowledge outputs, internally reorganising, and externally networking.

Figure 1.6 Sources of university revenue 1991 to 2000



Source: Department of Education, Science and Training Statistical Collection

The shift from being academic-referenced to government-referenced commenced in the late 1980s. Up to this point, universities had been protected in their relations with both Federal and State governments by semi-independent commissions that advised on policy matters and resource allocation. From 1988, these responsibilities at national level were transferred to the Commonwealth Department of Employment, Education and Training while relatively quickly most of the various State commissions were wound up. As already noted, the Commonwealth had adopted macroeconomic and sectoral policies designed to integrate Australia more competitively into the world economy, and effective human capital investment was seen as instrumental to that end. This was a contentious stage in the assertion of government influence on higher education, with academics attacking the new directions as instrumentalism, driven by economic rationalism and managerialism and undermining traditional collegial culture.

The new directions included government-driven institutional mergers, central allocation of single block operating grants on a triennial basis for student places, 'ear-marked' funding to meet national priorities and requirements on universities to produce planning and performance documentation. Increased public expenditure for growth was provided alongside the introduction of a mechanism for students to pay a share of their course costs, either in 'up-front' fees or on a deferred basis through income contingent loans (the Higher Education Contribution Scheme). Research funding introduced greater selectivity and concentration in allocations, while efforts were made to achieve greater flexibility in staffing policy and increased research collaboration with State and Territory Governments and industry.

In each successive year following the 1988 White Paper on higher education, Commonwealth policy became less prescriptive and more driven by incentives than mandates. National targets for graduate output by fields of study were abandoned, data collections were reduced and requirements for mandatory research plans were discontinued. Project-specific capital works financing was largely replaced by a 'roll-in' of capital funding into the operating grant for maintenance and new developments. Detailed approval and accounting processes for course shifts across fields of study were relaxed, and universities were encouraged to expand both overseas and domestic fee paying courses. The response of institutions varied, but many

responded positively to revenue generation opportunities, with some becoming aggressively competitive.

In the mid-1990s, the Commonwealth sought to further reduce dependency of universities on government and to enable them to respond more directly to market signals by raising the level of user payments relative to public investment. It also relaxed some of the rules relating to charging student fees and pressed universities to make genuine productivity gains for salary raises negotiated through enterprise-specific bargaining. In 1995, the then Labor Government refused to provide full automatic supplementation for staff salary rises achieved through enterprise bargaining, requiring the universities to find the component above a general price adjustment index through internal efficiencies and external earnings. In 1996 the incoming Coalition Government retained this policy.

Commonwealth government policy has focused more recently on strengthening the incentives for universities to develop research links to national innovation, concentrating research expertise in centres of excellence, improving the relevance and efficiency of research training and reinforcing the overall quality assurance framework. The intent of policy as outlined in the White Paper on research and research training (Kemp 1999) was to strengthen the links between the work of universities and the market.

Changing Relations of Government and Universities

With a shift to market orientation, relations between government and universities shifted from being directive to facilitative, but with a stronger emphasis on accountability for outcomes. Simultaneously, there was a loosening of input and process controls to enable universities to be more enterprising but also a tightening of requirements relating to educational standards and cost-effective use of resources.

In this new context, the main objectives of Commonwealth policies for higher education were to expand opportunity; improve institutional responsiveness to varying student needs and industry requirements; assure quality; advance the knowledge base and university contributions to national innovation; and ensure public accountability for the cost-effective use of public resources. The Commonwealth sought to sustain the nation's investment in higher education, having regard to a fair sharing of the costs and the direct benefits, and to improve access by students and industry to higher education services. It aimed to establish a mix of mechanisms for financing student access and institutional provision, including tuition free grants on the grounds of equity (for enabling students) and merit (higher degree research students), Higher Education Contribution Scheme based places and fee-paying opportunities. Through targeted support for special initiatives, the Commonwealth aimed to improve participation and success for particular groups, and to increase the supply of specific skills.

A number of major facilitation measures were employed. These include incentives for universities to reform workplace practices and administrative processes in order to achieve increased efficiencies; performance-based initiatives as with the reforms to higher education research and research training; and publication of increased information about provider capacities and performance results to help guide student choice and satisfy public accountability requirements. Closer attention to educational standards was seen as necessary in order to inform student choice and protect Australia's international reputation.

With growing diversification of providers and modes of provision as well as demand, central planning approaches using supply side subsidies became increasingly problematic, while the pressures for demand side financing increased. With the declining dependence of universities on government provided financial assistance and their increasing involvement in commercial activities, the steering role of the national education department moved from a transverse to a

parallel position of influence. Concurrently, universities formed new relations with multiple government agencies and other partners.

Funding and Funding Mechanisms

The total operating revenue for universities grew considerably over the decade (Table 1.2), including an increase in student contributions to university revenues through fees and charges (including from the Higher Education Contribution Scheme). Taking into account the various Commonwealth subsidies involved in HECS , the actual student contribution through HECS alone as a proportion of University operating grant funding increased from 21 per cent in 1997 to 25 per cent in 2000. State and Territory governments have generally been withdrawing their support, although the Queensland, Victorian and Australian Capital Territory Governments have provided some support for science and technology, research and development, and regional development initiatives.

Table 1.2 Finance characteristics of universities over the decade

Part a university operating revenue before abnormal items				
Source	**1991 ($'000)**	**2000 ($'000)**	**Absolute change**	**% change**
Commonwealth Government grants (HEFA)	3 011 733	3 912 870	901 137	30
HECS	638 368	1 675 697	1 037 329	162
other Commonwealth Government grants	360 589	306 016	-54 573	-15
fees and charges	536 894	1 697 446	1 160 552	216
Investment income	235 475	320 929	85 454	36
Royalties, trademarks and licences		14 593	14 593	
Consultancy and contract research		467 422	467 422	
State Government	279 491	143 552	-135 939	-49
other sources	399 363	789 143	389 780	98
Total	5 461 913	9 327 667	3 865 754	71

Part b university operating expense before abnormal items				
Type of Expenses	**1991 ($'000)**	**2000 ($'000)**	**Absolute change**	**% change**
Academic staff (salaries and salary-related)	1 808 624	2 859 430	1 050 806	58
Non-academic staff (salaries and salary-related)	1 457 780	2 506 186	1 048 406	72
All staff	3 266 404	5 365 616	2 099 212	64
Other expenses	1 513 979	3 640 649	2 126 670	140
Total (a)	4 780 383	9 006 266	4 225 883	91
Operating surplus	681 530	321 401	-360 129	-53

Part c revenue sources	1991 ($'000)	2000 ($'000)	Absolute change	% change
public spending on higher education as a per cent of GDP (b)	1.10%	0.93%	-0.17%	
Private spending on higher education as a per cent of GDP (c)	0.43%	0.50%	0.07%	

(a) 2000 Salaries do not include superannuation
(b) includes HECS
(c) excludes HECS
Source: Selected Higher Education Statistics 1992, DEST Finance 2000, Selected Higher Education Statistics

The mix of Commonwealth grants from Budget appropriations and Higher Education Contribution Scheme-sourced payments (via the Higher Education Contribution Scheme Special Account) has been changing, with increasing student numbers and accelerating repayments of student debt. Commonwealth Government payments to universities, including advances for Higher Education Contribution Scheme students, were indexed with regard to planned student load[3]. However, the majority of universities in recent years have been over-enrolled against their funded targets and some significantly so. In 1999, nine universities were over-enrolled by more than 10 per cent and two by more than 20 per cent. From 1998, the Commonwealth has paid universities at a marginal rate for undergraduate over-enrolments, in the expectation that institutions accommodate up to 5 per cent extra students.

Income from sources other than Commonwealth grants, the Higher Education Contribution Scheme, over-enrolment payments and State and Territory government grants as a proportion of total revenue increased from 23 per cent in 1992 to 32 per cent in 1998. Fee-paying students constituted the most important component of this additional income.

Overseas fee-paying students increased to over 90,000 equivalent full-time student units in 2000 and are projected to increase to over 110,000 equivalent full-time student units by 2003. Total overseas fee income grew by over 20 per cent over the period 1997 to 1999 when it reached over $800 million. Fee-paying domestic student numbers grew by over 50 per cent, from over 16,000 in 1997 to almost 25,000 in 2000 and revenue increased to $180 million. Trends here vary, with the highest margins generally being in management and information technology programs and the lowest in technological fields. The strongest demand is in business, computing, law and niche behavioural and health sciences. Demand is weaker in the social professions such as teaching, nursing and social work. Fee-paying domestic undergraduate student numbers have started to rise since the policy change of 1996 permitted such enrolments. In 1998, nine universities offered undergraduate courses on a fee basis to 830 equivalent full-time student units, while by 2000 fifteen universities were offering such courses amounting to 2,650 equivalent full-time student units.

Other university revenue consists of fees and charges for continuing education (which grew by $24 million – 53 per cent – from 1992 to 1998), investment income, income from donations and bequests, and research income (which grew by 39 per cent from 1996 to 2000), with particularly impressive growth in funds attracted from industry. While the aggregate income for the sector increased by 71 per cent over the period 1991 to 2000, expenditure rose by 91 per cent resulting in a declining surplus. External borrowings by universities also increased considerably (they more than doubled between 1994 and 1999, increasing from $141 million to $346 million).

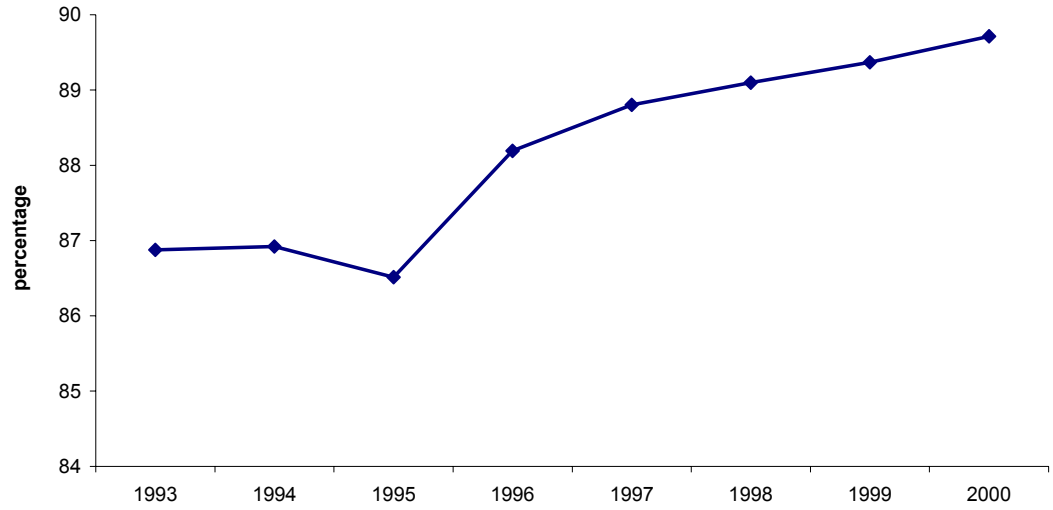
[3] From the 1995 Budget the index did not provide full supplementation for wage increases.

The higher education financing policy framework has been subject to public discussion over recent years. In 1997 a national committee of review was established with Mr Roderick West as chair. Following receipt of the committee's final report, Learning for Life (West 1998), the Government began the process of constructing a response to the committee's recommendation for a deregulated student-centred system. This included developing a plan for a demand-driven system characterised by fee and admissions deregulation, a universal public subsidy for undergraduate students and a loans scheme to finance students' costs of tuition. However, following a leak of a Cabinet submission which listed this as an option, the Government confirmed that the existing policy would be maintained.

Quality Assurance, Measuring Outcomes and Performance Indicators

Transition to a mass higher education system with a stronger emphasis on the use of market mechanisms combined with concurrent growth in the diversity of institutions, programs and course delivery arrangements, required increased attention to quality assurance and monitoring of the performance of institutions. Moreover, the growth in fee-based courses and increased enrolments in private institutions produced increased pressures to ensure that universities were meeting students' needs.

Figure 1.7 Overall satisfaction levels 1993-2000



(a) Overall satisfaction refers to the percentage of graduates responding 3,4,5 on a 5-point scale to the question, "overall, I was satisfied with the quality of this course'.
(b) Note, there is a break in the series. Data refer to all graduates in 1993 and 1994 and thereafter only to Bachelor level graduates.
Source: Graduate Careers Council of Australia, *Course Experience Questionnaire*, various editions in Aungles and Karmel (2000)

Quality Assurance

Developments in the 1980s provided a sound basis for more recent efforts in quality assurance. Considerable efforts were given to achieving increased efficiency and effectiveness and to promoting critical self-assessment and system-wide evaluative studies. Major discipline reviews, for example, were funded to determine standards and to improve quality and efficiency. While these highlighted the importance of quality assurance within institutions and across the sector, there was still no mechanism to ensure that the recommendations of reviews were acted upon at the institutional level.

In its 1991 policy statement, *Higher Education: Quality and Diversity in the 1990s* (Baldwin 1991), the Commonwealth addressed weaknesses in the discipline review approach and announced new initiatives that included provision of funding additional to operating grants for those universities able to demonstrate a high level of quality assurance in the context of their missions and goals. A Committee for Quality Assurance in Higher Education was established, with Professor Brian Wilson, Vice-Chancellor of the University of Queensland, as chair, to advise the Commonwealth on quality assurance issues and make recommendations on the allocation of annual quality-related funds. Between 1993 and 1995, the Quality Assurance Program led to annual independent audits of institutions' quality assurance processes. Self-reviews within this program fostered an enhanced awareness of the importance of quality assurance and triggered considerable changes in institutional management, while the visits of external panels demonstrated the need for universities to be able to provide convincing evidence of the effectiveness of their mechanisms to assure quality. Rather than providing a snapshot of current activities as the discipline reviews had, this holistic approach had the advantage of involving each university in self-analysis and developing improvement strategies.

Since 1998 universities have been required to submit Quality Assurance and Improvement Plans as part of the annual profiles discussions between the Government and institutions concerning performance and resource needs. These plans are expected to outline goals, strategies and outcomes in the key areas of teaching and learning, research, community service and management. They are also required to provide information on graduate outcomes. More recent quality assurance initiatives include the development of National Protocols for Higher Education Approval Processes and the establishment of the Australian Universities Quality Agency. In April 1999, Commonwealth, State and Territory Ministers of Education, meeting as the Ministerial Council on Education, Employment, Training and Youth Affairs, referred the issue of a common approach for higher education accreditation criteria and procedures to a committee of higher education officials. The committee's deliberations were informed by developments in quality assurance in the higher education sector in Australia in the 1980s and 1990s, as well as by developments in the international arena (Anderson, Johnson & Milligan 2000; and Harman & Meek 2000). They were also driven by concern about safeguarding Australia's position in the important overseas student market and the rapid expansion in the number of private higher education providers including overseas institutions.
The committee of officials recognised the strength of existing quality assurance arrangements and sought to build on that strength. It recognised the need for common accreditation processes across all States and Territories and the need to independently evaluate those accreditation processes, as well as the internal quality management processes adopted by universities. The committee presented its advice to Ministers in March 2000, making two recommendations: that Ministers endorse the National Protocols for Higher Education Approval Processes and agree to the establishment of the Australian Universities Quality Agency. Both recommendations were accepted and were integrated into the Australian Quality Assurance Framework. The framework encompasses the roles of the Australian Qualifications Framework, the universities, government and the Australian Universities Quality Agency (Jones et al. 2000).

Under these new arrangements, responsibility for quality assurance is shared between a number of partners. Self-accrediting universities accredit their own courses with the primary responsibility for assuring academic standards. Following National Protocols, State and Territory Governments accredit the courses of other providers and have special responsibilities with regard to recognition of new universities. The Australian Universities Quality Agency, which began operations in 2001, monitors and reports on quality assurance in Australian higher education, and audits each self-accrediting institution and the accreditation bodies of the States and Territories over a five-year cycle. The Australian Qualifications Framework, established by the Ministerial Council of Education, Employment, Training and Youth Affairs in 1995, provides for national articulation of awards offered in the Australian vocational education and training and higher education sectors. It maintains a public register of endorsed post-compulsory education

providers and accreditation authorities, so protecting the integrity of Australian higher education. Finally, the Commonwealth monitors and publishes performance data annually and promotes quality and teaching excellence.

Measuring Outcomes

The Commonwealth has employed a range of indicators of outcomes from higher education. These include graduate attributes, graduate destinations, student perceptions of course quality, student perceptions of the research training environment, completions, and attrition rates.

Since 1998 all public universities have been required to specify their graduate attributes in their Quality Assurance and Improvement Plans, which are submitted as part of the University profiles process. Graduate attributes are sets of generic capabilities that have been identified by universities as those which are desirable for all graduates to possess by the end of their course, irrespective of their field of study. The public policy intent has been to focus on the outcomes of university functions, as distinct from inputs and processes or graduate outputs such as student completion rates. Progress has been slow but many universities are now working towards embedding their graduate attributes into the curricula and developing strategies for assessing and recording outcomes (ACNielson Research Services 2000).

Increasingly universities are using achievements in relation to graduate attributes as indicators of quality in teaching and learning outcomes. Graduates are invited to respond to the Course Experience Questionnaire in the year after their graduation. This instrument has been administered by the Graduate Careers Council of Australia on a nationwide basis for seven years. It uses as one of its indicators the degree to which students believe that their course has improved their generic skills. A series of 25 questions seeks graduates' satisfaction with various aspects of their course including teaching, goals and standards, workload, assessment, generic skills and a single question referring to overall satisfaction. National level results for various classifications, such as field of study, level of study, gender, age and equity groups, are presented in the annual Course Experience Questionnaire report and are used extensively within institutions to manage institutional performance. In addition, data are used to inform student choice and are now routinely included in student guides. Institutions are increasingly using results for marketing purposes. Figure 1.7 summarises results for overall levels of student satisfaction for the period 1993-2000.

A Postgraduate Research Experience Questionnaire has also been trialed. It measures research graduates' satisfaction with supervision, skills development, intellectual climate, infrastructure, thesis examination and goals.

In October 2000, a national Graduate Skills Assessment was used for the first time. This voluntary test, developed by the Australian Council for Educational Research with Commonwealth funding, is being made available to students in their first and final years of university. Four generic skills have initially been tested – critical thinking, problem-solving, interpersonal understandings, and written communication. To date, take up of this instrument has been limited.

The findings of the 1999 survey of employer satisfaction with graduate skills reinforced the need to focus on learning outcomes and generic skills. Employers were found to discriminate in their hiring practices mainly on the basis of graduate capacity for independent and critical thinking but also found inadequate written communication and interpersonal skills and a lack of understanding of business practices. With regard to those recruited, the greatest skill deficiencies among new graduates were seen to be in the areas of creativity and flair, oral communication and problem solving.

Reflecting the strong vocational orientation of the Australian higher education sector, the Graduate Destination Survey represents the longest standing of the national surveys of graduate outcomes currently available, having been conducted annually since the mid-1970s by the Graduate Careers Council of Australia. Approximately 90,000 graduates respond annually to the questionnaire producing a response rate of over 60 per cent.

The Graduate Destination Survey measures graduates' destinations four months after completing their courses. The survey provides information on the type of employment, salary level, and destinations of graduates, including details on further study arrangements. Since the early 1990s, the proportion of bachelors' degree graduates in full-time employment as a percentage of those available for full-time employment has increased from about 70 per cent to almost 80 per cent.

Performance Indicators

Performance indicators in the higher education sector have a number of purposes, including sector-wide and institutional accountability, assisting in shaping policy development, helping institutions managing performance, benchmarking across institutions and informing student choice. They have clear limitations and need to be used as one of a variety of measures to manage resources and develop policy.

The development of performance indicators has been the subject of continuing, and at times intense, debate within Australia over the past two decades. Reviewing developments in the early 1990s, the Performance Indicators Research Group (Linke 1991) began trialing a broad range of indicators suitable for assessing the performance of higher education and recommended the inclusion of graduate destinations as a measure of institutional performance. This exercise was followed in 1994 and 1996 by the release of various indicators. The first was the publication, Diversity and Performance of Australian Universities (Department of Employment, Education and Training 1994), containing 28 indicators of diversity and performance including indicators of student pass rates, drop out rates and completion rates and graduate destinations. This was followed by the publication, Diversity in Australian Higher Education Institutions, 1996 (Department of Employment, Education and Training 1996), presenting 68 indicators across the areas of students, staff, resources and research. Indicators of graduate outcomes included in this publication referred only to graduate destinations.

In 1998, the Department published The Characteristics and Performance of Higher Education Institutions (Department of Education, Training and Youth Affairs 1998) comprising 360 indicators covering students, staff, finances and outcomes. This contained graduate outcomes data, including retention rates, student progress rates, graduate destinations and, for the first time, graduate satisfaction. The publication used a combination of clustering and factoring techniques to summarise the mass of data and to empirically derive the key characteristics of institutions within the higher education sector. The indicators were updated at the end of the decade (Department of Education, Science and Training 2001).

Research and Research Training

Since the late 1980s, major efforts have been made to enhance universities' research efforts, and to encourage universities to work more closely with industry and be more involved in national innovation effort. The Green Paper on higher education policy stated that 'research and postgraduate studies have a vital role to play in the continuing development of the Australian economy, and in enhancing our national capacity to adapt to changed social, cultural and economic circumstances' (Dawkins 1987, p 65). It called for increased university collaboration with industry and announced that in future the Commonwealth would identify areas of research priorities and double the proportion of competitive research allocations through the newly established Australian Research Council.

A year later the White Paper on higher education (Dawkins 1988) further explained these new policy directions, while the 1989 policy statement on research set out in more detail the agenda for increasing the national return on science through directing resources within institutions to the most productive and experienced researchers through a policy of selectivity and concentration. The 1989 statement explained that research funds needed to be 'allocated competitively and should go to those institutions, research groups and individuals best able to make the most use of them' (Dawkins 1989, p. 2). An amount of $65 million was 'clawed back' from university operating grants over three years and redistributed to the Australian Research Council and the National Health and Medical Research Council.

The new policy framework also encouraged, wherever possible, the allocation of research funds in a manner that encouraged contributions from other sources, such as State Governments, other research agencies and institutional resources. A number of priority areas were identified for five years for performance-based funding. These were materials science, including aspects of mineral processing; scientific instruments and instrumentation; cognitive science; molecular approaches to the management of Australia's biological resources; and marine science and technologies. Research proposals in the identified priority areas were to be judged on the basis of scientific or technological merit as well as on the commercial potential of the proposal and the extent to which the research would lead to collaboration between institutions or groups of researchers within an institution, and the probable impact of a successful outcome for the research.

Universities generally responded enthusiastically to the new opportunities and directions. Each year the Australian Research Council received increasing numbers of applications for grants in its competitive grants programs. New links with industry were established and this development was particularly assisted with the establishment of the Cooperative Research Centre program and overall increases in Commonwealth funding. Commercial arms of universities became increasingly active and there was increased investment in science and technology precincts, including incubators for start-ups involving universities and other partners. The higher education sector carried out a growing share of the nation's basic research and applied and experimental research.

Commonwealth funding for higher education research increased substantially through the 1990s. Total Commonwealth higher education research funding increased by 64 per cent between 1990-91 and 2000-01 while support for Australian Research Council and related grant schemes more than doubled over the same period (Table 1.3). Research funds attracted from industry and from State and local government sources also increased substantially. Over the period 1992 to 1997, support from industry increased from $77.4 million to $208.3 million, while support from State Governments increased from $34.3 million to $61.3 million, and from local government from $0.7 million to $2.5 million. Human resources devoted to research in universities almost doubled, growing from 24,902 person years in 1988-89 to 45,502 in 1998-99. Of this university research effort, by the year 2000 postgraduate students accounted for about 60 per cent and academic staff for 40 per cent (Australian Bureau of Statistics 2000c).

Table 1.3 Commonwealth Support for Higher Education Research and for Science and Innovation ($m)[4]

	Higher Education Research				
	Aust Research Council and DETYA grant schemes	Specific R&D support	Estimated general research support	Total	Total Science and Innovation Support
1990-91	211.5	155.3	720.9	1087.7	2882
1991-92	277.8	160.3	765.1	1203.2	3184
1992-93	294.8	162.5	889.6	1346.9	3499
1993-94	327.2	161.7	950.4	1439.3	3821
1994-95	339.9	161.3	1013.9	1515.0	3942
1995-96	374.3	160.7	1077.9	1612.8	4196
1996-97	422.5	160.9	1124.0	1707.4	3836
1997-98	442.2	157.9	1154.5	1754.7	3904
1998-99	472.5	157.2	1182.0	1811.7	4101
1999-00[5]	448.0	155.1	1169.8	1772.8	4167
2000-01[6]	467.6	151.0	1169.0	1787.6	4538

Source: Department of Industry, Science and Resources 2000, Science and Technology Budget Statement 2000-02, Table 2, p. 36 Canberra

New directions for research and research training were announced in a 1999 White Paper (Kemp 1999) that sought to strengthen the incentives for universities to develop further links to national innovation, concentrate research expertise in centres of excellence, improve the relevance and efficiency of training for research students, and reinforce the overall quality assurance framework.

Under these new arrangements, funds from research training are separated from funds for other (non-research degree) courses and made contestable through a performance-based funding formula that rewards student completions and research income won from research funding councils and industry. Research and research training management plans are required, including identification of research active staff and their outputs. The plans and performance improvement indicators are to be published annually and their claims verified periodically through external audit. Each university is encouraged to focus on its distinctive strengths and in doing so to differentiate itself from others. Within each university, the research performing areas and individuals are being identified and monitored with a view to maximising institutional success.

In an effort to encourage faster growth in research income from industry, new funding arrangements for research and research training have equalised the weightings from industry income with other forms of research income in the formulae for research student scholarships and research infrastructure block grants.

Universities vary in the research support they attract from industry. In 1999, nine universities attracted more than 40 per cent of their research funds from industry while eight institutions attracted less than 20 per cent of their research funds from industry.

[4] Using implicit price deflators based on chain volume measures
[5] Estimated to approximate cash accounting expenditure of earlier years
[6] Estimated accrual

International Orientation

The 1990s saw impressive developments in the internationalisation of Australian higher education. With government encouragement, universities made important advances in internationalising curricula to facilitate better understanding of other cultures and to expand trade. University research is now more closely linked internationally with research groups and networks in other countries. However, the most dramatic and important developments were with regard to the enrolment of international students on a fee basis.

In 1987, the Commonwealth allowed universities to charge overseas students on a full cost recovery basis and since January 1990 all new international students have been required to pay the full costs of their education. As shown in Table 1.4, overseas student load increased dramatically between 1991 and 2000 – from almost 26,000 equivalent full-time student units to over 93,000 equivalent full-time student units. While the main concentrations of overseas students are still in the areas of business studies, computer science and engineering, overseas students are now spread over a wide range of fields. The proportion of female students also has increased – from 41.8 per cent in 1991 to 47.9 per cent in 2000.

Overseas fee-paying students totalled 85,820 equivalent full-time student units in 2000 and university revenue from overseas fee paying students increased by 22 per cent over the period 1997-99. However, while overseas fee paying load had increased by 34 per cent, revenue per equivalent full-time student unit had declined by 8.5 per cent. This decrease appears to have resulted from a number of factors. Some institutions experienced continuing aggregate income growth but with declines in excess of 30 per cent in average revenue per equivalent full-time student units. Some shaved margins in the light of more intense competition, while others changed the nature of the courses they offer. Others still saw their 'offshore' enrolments grow at a faster rate than on-campus enrolments.

Table 1.4 Actual Student Load (EFTSU) for Commencing and All Overseas Students by Gender 1991-2000

	Commencing Students			All Students		
Year	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
1991	6,833	5,311	12,144	15,118	10,839	25,957
1992	7,676	6,104	13,781	16,874	12,823	29,697
1993	7,137	5,632	12,769	16,487	12,591	29,078
1994	8,924	7,205	16,130	19,320	15,106	34,427
1995	10,625	9,585	20,210	21,505	17,863	39,367
1996	12,711	11,525	24,236	27,794	24,022	51,816
1997	15,225	14,295	29,519	32,090	28,879	60,969
1998	16,780	15,595	32,375	35,675	32,689	68,364
1999	19,841	18,671	38,512	40,505	37,604	78,109
2000	24,508	22,526	47,034	48,650	44,683	93,333

Source: *Students 1999, Selected Higher Education Statistics*, Table 92 p.157, *Students 2000, Selected Higher Education Statistics*, Table 78, p.154-5, DEST, Canberra

1.3 Institutional Landscape

Over the past decade, the institutional landscape has changed in many important respects, reflecting particularly changes in student demand and Commonwealth policies. Attention will be given here to changes in the number, types and locations of institutions; growth of the system; private providers; and institutional management.

Number, Types and Locations of institutions

Australia's higher education system consists of 39 universities, four other self-accrediting higher education institutions and around 85 other higher education providers accredited by State and Territory accreditation authorities. There are 42 institutions eligible for Commonwealth operating grants. Eligibility for operating grant support and loans is determined by the listing by Parliament of institutions in the Higher Education Funding Act 1988. This list includes 38 universities (Bond University is not included), Batchelor Institute of Indigenous Tertiary Education, the Australian Maritime College, Avondale College and Marcus Oldham College. A slightly different list of institutions is eligible for research support as other bodies like Bond University and the Melbourne College of Divinity can receive research grants if they are a registered company. With the exception of the Australian National University, which is established under Commonwealth legislation, and the Australian Catholic University, which is established under companies' law, all universities are established under State or Territory legislation.

In 1990, Commonwealth-supported higher education was offered in some 61 universities and colleges of advanced education, plus in a number of technical and further education colleges and by small private providers. This was a time of consolidation through institutional mergers, in many cases bringing together under one governing body and one chief executive officer a number of adjacent or nearby institutions. In many cases, universities combined with one or a number of colleges of advanced education, while in other cases (such as with Charles Sturt University) new universities were formed through combination of advanced education institutions. Many colleges of advanced education were themselves the product of previous mergers and transformations (see Box 1.1). In some States, such as New South Wales, by 1990 considerable progress had been made in achieving consolidation plans acceptable to the Commonwealth while in other cases negotiations had proceeded more slowly and Commonwealth approval had still to be achieved. Even with the consolidations that had taken place, many institutions were still relatively small, with the average size of the 26 universities being just over 12,000 students.

Structurally, the universities of today are very different to those of a decade earlier. Most are multi-campus in structure, operating from a number of non-adjacent sites. After some disappointing experimentation with federal structures, the common model is now a unitary structure, with funds to support teaching and research generally being distributed to cross-campus faculties rather than by individual campus administrations. As already noted, in addition to major campuses many universities have established smaller centres to offer some courses and provide various supports to off-campus students. Some of these are run jointly with technical and further education institutions and senior secondary schools (Shoemaker et al. 2000).

About 78 per cent of students are enrolled at campuses located in capital cities while the remainder study in regional, non-metropolitan centres. Non-capital city institutions are located mainly in New South Wales, Queensland and Victoria. In four States, major capital city universities now have regional campuses. Despite rapid enrolment growth across the system, especially since the mid-1990s, a number of regional institutions have found increasing difficulties operating in a more competitive environment. Of concern to many regional

institutions are the substantial numbers of regional students who forego their local institutions and are attracted to metropolitan institutions.

Over the past decade, the balance of student enrolments in the various States and Territories has changed somewhat, reflecting changes in population distribution and student demand. The main increases have been in Queensland and to a lesser extent in New South Wales, with the most striking declines proportionately being in South Australia.

Rapid Growth of the System

Between 1960 and 2000, total enrolments at university increased from about 54,000 to almost 700,000 students. Student numbers grew rapidly through the 1990s (Table 1.5), increasing by 30 per cent over the decade. Over the same period, student load increased from 422,563 equivalent full-time units in 1991 to 557,763 equivalent full-time units in 2000, representing an increase of 32 per cent. At the same time, it should be noted that these figures include overseas students[7] whose total number increased from 29,630 in 1991 to 95,607 in 2000. Without overseas students, the increase in student numbers over the decade was 19 per cent.

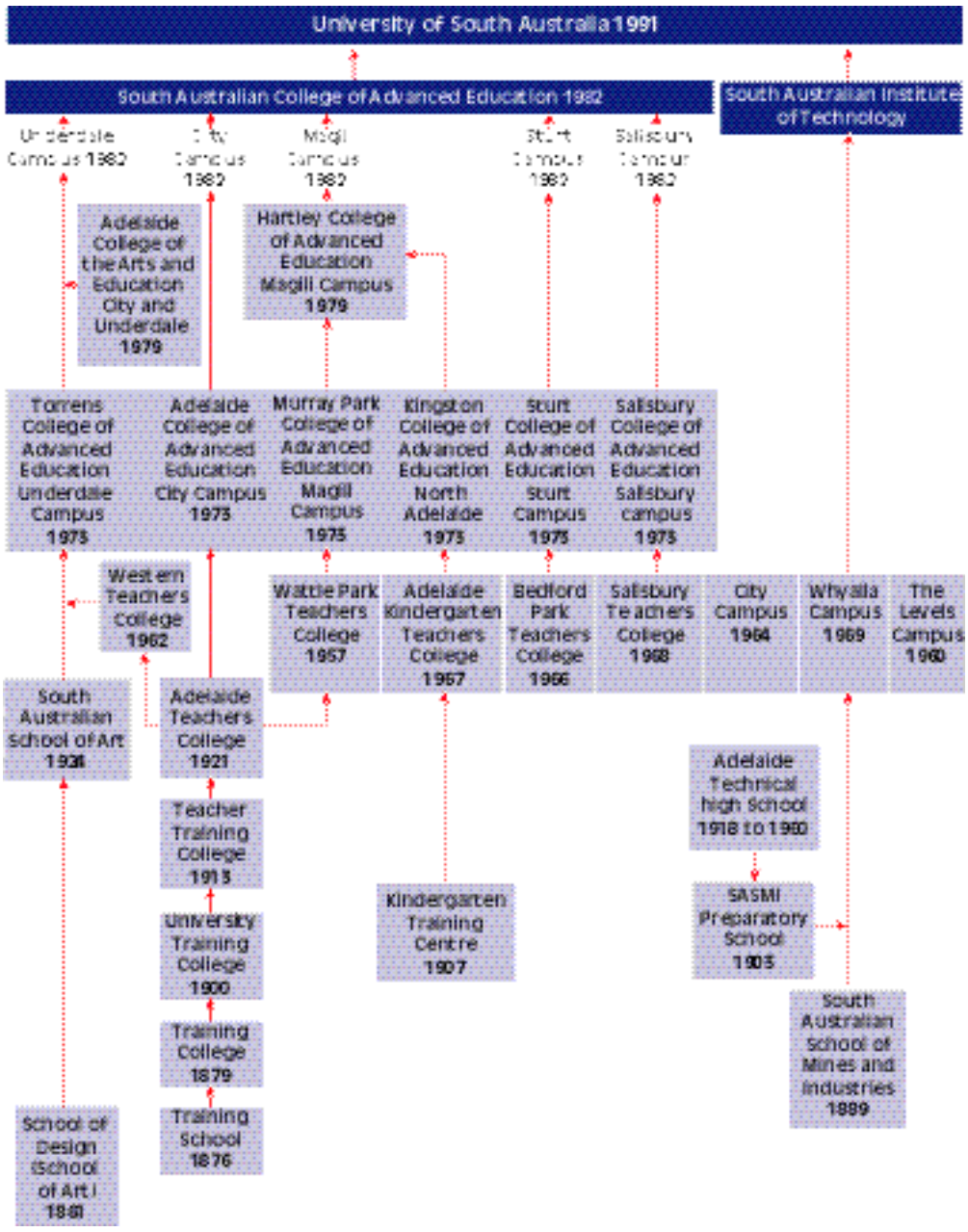
Table 1.5 Higher Education Students, 1990-2000

		Proportion				
	Total Students	**Full-time**	**Part-time**	**Per cent External**	**Growth Female**	**Annual Year Rate %**
1991	534,510	61.4	27.9	10.6	53.3	10.2
1992	559,381	60.6	28.5	10.9	53.4	4.7
1993	575,616	59.7	29.2	11.1	53.4	2.9
1994	585,435	58.9	29.3	11.8	53.5	1.7
1995	604,176	58.8	28.7	12.4	53.9	3.2
1996	634,094	58.7	27.9	13.4	54.3	5.0
1997	658,849	59.4	27.3	13.3	54.4	3.9
1998	671,853	59.1	27.4	13.4	54.7	2.0
1999	686,267	59.3	27.0	13.7	55.0	2.1
2000	695,485	58.6	27.6	13.7	55.2	1.3

Source: *Higher Education Students Time Series Tables 2000* Selected Higher Education Statistics DETYA 2001

[7] In the Higher Education Statistical Collection, Overseas Students, includes overseas students studying on-campus in Australia, at a campus of an Australian higher education institution overseas or through distance education.

Box 1.1 University of South Australia Genealogy Chart



Between 1991 and 2000, the proportion of both full-time and part-time students declined, whereas the proportion of external students increased by three per cent. Over the same period, the proportion of female students increased by two percentage points. In 1991 only 36 per cent of students enrolled in the PhD degree were female, by 2000, this figure had risen to 47 per cent. Likewise the proportion of females enrolled in masters degrees increased from 42 per cent to 48 per cent.

Over the decade the age composition of the student body changed. The proportion of students of aged 19 years or under fell by five per cent, while the proportion of 20 to 24 years old increased by over three per cent. The proportion 25 to 29 years old increased by 1.7 per cent while the proportion 30 years and over declined slightly.

In terms of broad fields of study, over the ten-year period 1991 to 2000 the most rapid growth of enrolments was in law and legal studies (123 per cent), business, administration and economics (60 per cent), science (52 per cent) and arts, humanities and social sciences (40 per cent).

The total number of overseas students increased from 29,630 in 1991 to just over 95,607 in 2000. In 1991 overseas students constituted 6.2 per cent of total student load while by 2000 their contribution came to 16.7 per cent. From the start, a high proportion of full-fee paying overseas students has been enrolled on a full-time basis. However, with the rapid expansion in 'offshore' enrolments the proportion of overseas students studying full-time has fallen from 80 per cent in 1991 to 56 per cent in 2000. In 2000, around two thirds of overseas students were studying for bachelors degrees and other undergraduate awards and around 30 per cent for postgraduate awards.

Between 1991 and 2000, total full-time, part-time and casual staff (expressed as full-time equivalents) increased from 73,243 in 1991 to 82,233 in 2000, an increase of 12 per cent. Student load increased by 32 per cent over the same period. In both 1991 and 2000 around 43 per cent of staff (excluding casual staff) were classed as academic and remainder as non-academic. The proportion of staff (full-time equivalents) employed as casual staff was around ten per cent of all staff in 1991 but by 2000 this had increased to over 15 per cent. In 1999, around three quarters of casual staff were in academic organisational units. In terms of numbers, over the decade the numbers of academic full and part-time staff increased by seven per cent, while numbers of non-academic staff increased by five per cent.

Among full-time and part-time staff, research only staff (expressed in full-time equivalents) increased from 6,404 in 1991 to 7,866 in 2000, while teaching only and teaching and research staff decreased from 26,982 in 1991 to 23,988 in 2000. A substantial rate of growth in the highest and lowest bands of academic staff resulted in a decline in the middle classifications of lecturer and senior lecturer. The middle bands were reduced from 66 per cent in 1991 to 60 per cent in 2000. Whereas females constituted 30.1 per cent per cent of academic staff in 1990, by 1998 this proportion had grown to 34.1 per cent. Between 1990 and 1996, the proportion full-time and part-time female academic staff above senior lecturer increased from 1.4 per cent to 2.1 per cent.

Private Providers

Apart from the 42 institutions supported by the Commonwealth through annual operating grants, there is a growing and important other section of higher education made up of a variety of different types of institutions. These include public institutions funded through other Commonwealth portfolios such as the National Institute of Dramatic Art; institutions funded by State and Territory governments; non-government institutions that receive Commonwealth funding for a particular course or courses such as Avondale College; and non-government or private institutions that receive no direct Commonwealth funding (Nelson 2002). Total

enrolments of Commonwealth and State-funded places outside of institutions funded through the operating grant in 2000 came to 38,645 students.

Private higher education institutions fall in four main groups. The first group is made of non-government institutions that operate under their own legislation and have self-accrediting powers. The oldest of these is the Melbourne College of Divinity, established in 1910 by an Act of the Victorian Parliament. More recent institutions are Bond University located on the Gold Coast and the University of Notre Dame Australia in Fremantle. Both have their own acts of parliament, giving them similar powers of self accreditation to public universities.

The second group comprises institutions not established by legislation but which have been given wide powers under which to operate. The best known example is Melbourne University Private, which is a joint venture between the University of Melbourne and private partners. It gained approval in 1998 to operate for a period of five years under the Victorian Tertiary Education Act 1993 (Smith 1998, p. 11) but this was conditional on the University of Melbourne being responsible for certification of its courses (but not for accreditation, which lies outside the statutory powers of the University of Melbourne).

The third category comprises providers whose courses have been accredited by State or Territory accrediting agencies and other institutions seeking to have their courses accredited. Smith reported in 1998 that there were 68 authorised providers offering 225 accredited undergraduate degree and postgraduate award courses. Details of these are set out in Table 1.6. Another study (Watson 2000) reported that in 1999 there were some 85 private providers.

Some private providers in this group have existed for a long period, generally operating in relatively small but often well-established market niches. The most durable have been the theological colleges and Church-related colleges, whose courses generally closely resemble university courses. The largest include Avondale College, operated by the Seventh Day Adventist Church, and the Australian College of Theology, which is a national federation of various denominational theological colleges. Another sub-group in this category is long-term 'industry' commercial providers who conduct courses at tertiary level to meet the needs of their particular market areas. Notable features of this sub-group are high motivation of students, a focus on particular discipline areas and user-pays principles. Examples include highly specific professional associations (such as the Securities Institute, the Institution of Engineers and the Royal Australian College of General Practitioners), well-established commercial providers (such as business colleges), and institutions in the area of alternative health practice (concentrating, for example, on traditional Chinese medicine, naturopathy and homoeopathy).

Table 1.6 Higher Education Accredited Awards offered by Private Providers*

	Bachelor	Grad Cert	Grad Dip	Master	Doctoral
Vic	17	2	10	5	1
NSW	24	2	26	6	0
SA	26**	9	14	9	1
ACT	6**	25	15	-	-
Qld	9	3	6	3	-
WA	1	-	-	-	-
Tas	-	-	-	-	-
NT	-	-	-	-	-
Nat. Total	83	41	71	23	2

*approximate numbers as advised by State and Territory officials, August, 1998
**Includes TAFE degrees

Source: Smith, T. (1998) 'Higher Education Providers: the New Ball Game', Paper presented at 22nd ATEM Conference, Darwin.

The fourth group of private providers are colleges owned by universities or whose courses feed into university courses. Both generally have not sought accreditation of their courses from State or Territory accreditation bodies but rely on internal university approval processes.

University Management in a New Era

The higher education reforms of the late 1980s called for substantial changes in institutional management. The White Paper on higher education (Dawkins 1988), for example, explained that achieving increased efficiencies and effectiveness and implementing the Government's reform agenda would call for stronger and more decisive management and governance. In particular, it urged clearer specification of the roles of governing bodies in relation to university management, for governing bodies to be smaller in size, and for increased emphasis to be given to the trustee aspects of governing board responsibilities in setting broad directions and policies and in review of performance. It also urged increased responsibilities for senior management, enhanced management skills for senior managers and more effective mechanisms of planning and review, especially if institutions were to establish effective partner links with other institutions and achieve enrolment growth in areas of national need.

In the following years, university governance and management generally was strengthened in many respects. University governing bodies are generally smaller in size and better focused on their responsibilities. Senior management teams have been expanded and in some cases more effective centralised processes for planning and budgeting, curriculum development, information systems, research management and international marketing have replaced more traditional collegial processes. There is however still capacity for improvement in these management areas in some institutions. Centralisation of responsibilities is more likely to be found in new smaller institutions and those derived from the former advanced education sector. Devolution of responsibility to faculties and departments in respect of planning and budgeting is still more likely to be found in those universities established before the extensive mergers of the late 1980s and early 1990s.

These various management changes have been driven by a number of factors, including the urgings of the White Paper and the Hoare report (1995), the needs of much larger and frequently multi-campus institutions, the impact of the 1993-1995 reviews conducted by the Committee for Quality Assurance and more competitive research funding. Also of considerable importance, however, has been the move to more entrepreneurial universities. With currently one third of university revenue on average being dependent on earned income, there are new and somewhat different problems facing management. Apart from risk and uncertainty in this income from year to year, such income costs funds to generate and often can be expended only for particular specified activities. While some universities have done extremely well, in other cases entrepreneurial activities are adding very little, if at all, to institutional surpluses.

Several universities have adopted more strategic approaches to cost reduction and revenue generation, basing their decisions on serious assessments of their relative strengths. Others are taking a less-well focused approach, top-slicing all areas for cost-cutting purposes, randomly offering redundancy packages to staff or embarking on revenue raising activities with comparative little advantage. Some have adopted internal resource allocation policies which reward earned income and give incentives to departments and faculties to take initiatives while ensuring a reasonable institutional share of earnings. Others employ less satisfactory approaches to the distribution of earned income.

Despite the considerable progress in management reform, serious deficiencies still remain in some universities, particularly relating to knowledge about costs, cumbersome governance

structures and inflexible industrial drivers. The final report of a study to develop a costing methodology for universities reported that universities lacked a basic knowledge of their cost structures and cost drivers required for sound management and pricing of services they offer (Ernst & Young 1998). Earlier, the Commonwealth committee established to review institutional governance and management had concluded that universities were not giving adequate attention to equipping people in management positions with the skills needed to manage change, people and risk in an increasingly commercial and competitive environment (Hoare 1995).

In 1999, the Commonwealth provided additional funds for a 'once-off' supplementation to the base level of university operating grants sufficient to pay for an additional two per cent rise in academic and general staff salaries. This supplementation was made available on a voluntary basis to universities on condition that they met a set of broad criteria, accommodating their specific enterprise circumstance but improving management, administration and workplace relations. The Government's aim was to unlock rigidities within institutions and enable greater flexibility in course offerings and innovation in the delivery of education services. Among the criteria for payment of supplementation are initiatives promoting cost savings, discretionary revenue generation and productivity gains, and performance management.

An ongoing problem in many universities is how to combine efficient management to meet the current highly competitive environment with substantial academic involvement in decisions that need to be based on high-level judgement. In many universities, there is a growing cultural gap between academics and senior management. This problem is being exacerbated with increasing academic workloads and pressures with respect to research and publication, and by the need for academics to undertake new teaching and administrative tasks related to income generating activities. In some cases academic communities have been split by arguments about entrepreneurialism and about the possible adverse effects of commercialism on academic values.

1.4 Higher Education and Society

Higher education systems are clearly products of their societies, reflecting not only the aspirations of students, labour market influences and institutional goals but also the impact of government policies and international influences. At the same time, higher education interacts in various ways with society, producing commodities of value and influencing many aspects of societal and economic life. This section will consider some particular points of interaction—student participation and completion rates, the production of graduates, the stock of graduates in the workforce, the starting salaries of graduates and graduate employment, access and equity, and research outputs and impact.

Participation and Completion Rates

Participation rates in post-compulsory education increased substantially over the period 1989 to 1999, as shown in Table 1.7. The overall participation rate over this period for those between 15 and 64 years of age increased from 15.9 per cent to 18.1 per cent. By 1999, there were almost 2.3 million people aged 15-64 years in post-compulsory education. The biggest increases over the period 1989 to 1999 were among the group 20 to 24 years of age. However, by 1999 older people made up a sizeable proportion of the student population, with 34 per cent of students in the age group 15-64 years being over 24 years.

Table 1.7 Students in Post-Compulsory Education

	Number of Students		Participation Rate	
	1999	Increase 1989-99	1989	1999
Age Group (years)	'000	%	%	%
15-19	1,028.1	10.6	66.2	77.8
20-24	456.0	56.5	22.2	34.4
25-34	372.6	35.3	10.1	13.2
35-44	253.8	45.4	7.0	8.8
45-54	114.7	79.1	3.8	4.6
55-64	31.9	23.6	1.8	2.0
Total	2,257.2	28.2	15.9	18.1

Source: Australian Bureau of Statistics, *Australian Social Trends 2000*, p. 93, Cat. No. 4102.0

A recent study (Martin, MacLachlan and Karmel 2001) found that around 70 per cent of an undergraduate student cohort would eventually complete an award. The estimates take into account students who fail to complete at an institution but subsequently re-enrol at the same university or a different institution and complete at a later date. Approximately 64 per cent of undergraduate students who enrolled at an institution in 1992 had completed an award at that institution by 1999. Around 33 per cent had not completed an award and were not studying at the institution of enrolment in 1999, and close to 3 per cent had not yet completed an award but were still studying. Full-time students have the highest completion rates while external students have the lowest. Compared to other domestic students, Aboriginal and Torres Strait Islander students have significantly lower completion rates.

Production of Graduates

The total number of higher education completions increased considerably between 1991 and 2000 (Table 1.8). Postgraduate award completions over this period increased by over 100 per cent while undergraduate completions increased by 43 per cent. Between 1991 and 2000, doctorates by research increased from 1,519 to 3,786, while masters course work awards increased from 5,510 to 25,414, masters by research from 972 to 1,640 and other postgraduate from 19,064 to 24,712.

Table 1.8 Award Completions 1991 to 2000

Year	Postgraduate	Undergraduate	Total	Change in Total in prior year %
1991	27,123	80,539	107,662	13.6%
1992	30,628	89,955	120,538	12.0%
1993	34,330	98,528	132,858	10.2%
1994	36,961	101,753	138,714	4.4%
1995	38,732	102,261	140,993	1.6%
1996	43,632	101,707	145,339	3.1%
1997	47,991	107,284	155,275	6.8%
1998	49,440	112,116	161,556	4.1%
1999	50,599	113,824	164,423	1.8%
2000	55,624	115,465	171,089	4.1%

Source: Department of Education, Science and Training Statistical Collection

There were changes in number of completions in different fields of studies with big increases over the period 1991-2000 in arts, the humanities and social sciences, business, administration and economics, engineering and surveying, health, law and legal studies, and science, while award completions in education fell (Table 1.9).

Completions by female students grew particularly in arts, humanities and social sciences, education and health. Females outnumbered males significantly in each of these three fields representing approximately two thirds of total student completions for each.

Stock of Graduates in the Workforce

In May 2000, 5.1 million people aged 15-64 years (40.2 per cent of the population) had completed a recognised post-school qualification. A further 7.6 million (59.8 per cent of the population) had no recognised post-school qualification.

Of those with post-school qualifications, 1.48 million (29 per cent) held a certificate III or IV vocational qualification, which was the most commonly reported qualification. A further 1.6 million persons (31 per cent) reported bachelor degrees. The smallest category comprised those with a higher degree, reported by 0.3 million (6 per cent of those with post-school qualifications). The most common post-school qualifications reported by 15-24 year olds was a basic certificate III or IV, but fewer 15-24 year olds held post-school qualifications than any other age group. In comparison, for 25-34 year olds, the age group most likely to have post-school qualifications, the most common qualifications were bachelor degrees and skilled vocational qualifications (34 per cent and 26 per cent respectively of those with post-school qualifications). For the age group 35-44 years on, skilled vocational qualifications were the most common post-school qualifications.

The increased level of qualifications in the community over the period 1991 to 2000 is shown in Table 1.10. In 1991, 41 per cent of the population held a post-school qualification, while a decade later this proportion had increased to almost 44 per cent. Over the same period, the proportion with a bachelors degree or higher degree increased from nine per cent to almost 16 per cent. In 1999, the highest concentration of persons with post-school qualifications were in the Australian Capital Territory, New South Wales and Victoria and the lowest in Tasmania and the Northern Territory.

Table 1.9 Award Completions for all students by fields of study, 1991 and 2000[8]

	1991	2000	change
Agriculture, Animal Husbandry	1,753	2,363	35%
Architecture, Building	2,145	3,701	73%
Arts, Humanities and Social Sciences	22,526	35,167	56%
Business, Administration, Economics	19,946	51,289	157%
Education	25,036	20,716	-17%
Engineering, Surveying	5,401	9,006	67%
Health	13,145	21,159	61%
Law, Legal Studies	3,489	7,588	117%
Science	13,853	24,717	78%
Veterinary Science	368	371	1%
Total	107,662	171,089	59%

Source: Department of Education, Science and Training Statistical Collection

Analysis of qualifications by birthplace and first language provides further insights. A higher proportion of those born outside Australia held post-school qualifications (53 per cent) compared with Australian born (47 per cent). Among those born outside Australia, those who spoke only English as their first language were more likely (58 per cent) to hold a post-school qualification than those who first spoke another language (49 per cent). The opposite is true for Australian born persons where 50 per cent of those who first spoke a language other than English had a post-school qualification compared with 47 per cent of those who first spoke English only.

Table 1.10 Educational Attainment of the Australian Population aged 15-64 years

	1991	1995	2000
Post-school educational qualification (%)	40.8	41.0	43.8
Bachelors degree or higher degree (%)	9.0	11.9	15.7
Undergraduate or associate diploma (%)	n.a.	9.1	8.2
Skilled or basic vocational qualification (%)	n.a.	19.9	19.9
Did not complete highest level of secondary school	36.2	36.1	32.0
Females with post-school qualifications (%)	43.0	43.9	45.2

Source: Australian Bureau of Statistics, *Australian Social Trends 2000*, Cat. No. 4102.0, Canberra, p. 82.

Throughout the 1990s, the unemployment rate for persons with post-school qualifications remained considerably below that for the population as a whole and particularly below that for those without post-school qualifications. For those with a bachelors degree or higher qualification, over the period 1989 to 1999 the unemployment rate varied between 2.4 per cent and 4.8 per cent, with 3.0 per cent in 1999. In contrast, for those without a post-school qualification, the unemployment rate varied between 8.4 per cent and 14.1 per cent, with 10.3 per cent in 1999 (Australian Bureau of Statistics 2000a, p. 82).

[8] Data from 1997 onwards were compiled in a different way to data for prior years, to take into account the coding of Combined Courses to two fields of study. As a consequence, the total for some broad fields of study show larger increases than would be the case if data for only one field were to be counted. Counting both fields of study for Combined Courses means that the totals for each year may be less than the sum of all broad fields of study.

Starting Salaries and Employment of Graduates

The median starting salary for bachelors degree graduates in 2001 was $35,000 pa, which represented 85.8 per cent of average earnings. From 1990 salaries declined to just over $25,000 for the two-year period 1991-1993, but then climbed to $31,000 in 1999 (see Table 1.11). Since 1993, graduate starting salaries have been about 80 per cent of average weekly earnings. Overall, salary for female graduates was 94.4% of males earnings in 2001.

Males tend to have completed awards in more highly paid fields of study than females, while females tend to come from the middle and lower paying fields. In 2001, 31.6% of males who completed the Graduate Destination Survey were in the five top fields in terms of starting salary (dentistry, medicine, optometry, engineering and computing science) compared with 6.5 per cent of female respondents. The lowest-paying fields were pharmacy, art and design, architecture and building, humanities and agricultural science. In 2001, there was a $21,400 differential between top and bottom paying fields.

For both males and females in every age group, full-time wage and salary earners with post-school qualifications earn more than their counterparts without post-school qualifications. The size of the differential generally increases with age; for example, average income for 15-24 year olds with post-school qualifications in 1997 was 21 per cent higher than for those without post-school qualifications, while the difference was 23 per cent for 25-34 year olds and 38 per cent for 55-64 year olds.

Table 1.11 Annual average weekly earnings (AWE) and median graduate starting salaries (GSS) and relativity, 1988-2001 ($000)

	AWE	GSS	GSS % of AWE
1988	24.9	23.0	92.4
1989	26.8	24.0	89.6
1990	28.7	29.4	86.9
1991`	30.0	25.3	84.3
1992	31.1	25.7	82.6
1993	31.8	25.5	80.2
1994	32.5	26.0	80.0
1995	33.9	27.0	79.6
1996	34.8	28.0	80.5
1997	35.7	29.0	81.2
1998	37.2	30.0	80.6
1999	38.0	31.0	81.6
2000	39.2	33.0	84.2
2001	40.8	35.0	85.8

Source: *Graduate Destination Survey 1999* (2000), p. 10, *Graduate Destination Survey 2001, Gradstats 2001*, p.5 (2002) Graduate Careers Council of Australia.

Of the new bachelor degree graduates available for full-time employment in 1998, 79.6 per cent were in full-time employment within four months of completing their degrees. A further 11.6 per cent were working on a part-time basis while continuing to seek full-time employment. Two years earlier the corresponding figures had been 80.6 per cent and 10.8 per cent respectively. In 1998, 8.8 per cent were not working and were still looking for full-time employment at the time of the survey. In the same year, males were more likely than females to have been in full-time employment at the time of survey. In 1998, 22 per cent of respondents were undertaking further study after completing their qualification.

Access and Equity

Over the past decade, considerable progress has been made in improving participation and access as a result of significant expansion of the higher education sector. At the same time, while the total number of students from equity groups overall increased, the representation of the Indigenous populations, people from socio-economically disadvantaged groups and from rural and isolated areas changed little over the decade. The most dramatic improvement in terms of participation rates of equity groups was among women undertaking non-traditional courses whereas the most disappointing results were for Indigenous people, people from rural and isolated areas, and those from socio-economically disadvantaged backgrounds. Continuing low participation in higher education among particular equity groups means that there remains groups in the population whose life chances of participation in post-school training are low and in turn this affects their success in the labour market.

Throughout the 1990s both the Commonwealth and individual universities took various initiatives to increase access and participation, especially of particular equity groups. As part of the Dawkins' reforms, the Commonwealth released the policy document, A Fair Chance for All (Department of Employment, Education and Training 1990) which defined national equity objectives for higher education and set out equity responsibilities for both the Commonwealth and universities, providing a framework for measuring and reporting progress towards more equitable representation of equity groups. Six particular groups were identified as being under-represented in higher education: people of Aboriginal and Torres Strait Islander background; people from socio-economically disadvantaged backgrounds; women, especially in non-traditional areas; people from a non-English speaking background who had arrived in Australia within the past ten years; people with disabilities; and people from rural and isolated areas. Each university was asked to develop equity plans taking account of national objectives and local circum-stances. Since 1991 special funding to institutions for equity efforts has been based on performance against equity plans.

In 1991 additional funds were provided by the Commonwealth through the Equity Programme to assist cooperative programs for students with disabilities and in 1994 the Regional Disability Liaison Officer initiative was established to encourage people with disabilities to participate in higher education. Following a change of government in 1996, the Commonwealth's existing equity programs were maintained with an emphasis being given to improving outcomes for equity groups. From 1998 student allowances were simplified with the introduction of a means tested Youth Allowance replacing the existing AUSTUDY. Throughout the decade, universities were publicly accountable for implementing the Commonwealth's equity agenda through annual reporting.

One group whose needs have received considerable attention over the past decade are Indigenous Australians. Table 1.12 provides trend data for commencing and total Indigenous student enrolments for the period 1991 to 2000. The proportion of Indigenous students in the wider domestic student population increased from 0.9 per cent in 1991 to 1.2 per cent in 2000. In 2000, 1.5 per cent of commencing students in universities were of Aboriginal or Torres Strait Islander descent. However, the proportion of Indigenous people in the Australian population also increased over this period, and reached 2.2 per cent in 2001. Many Indigenous students suffer the multiple handicaps of previous educational disadvantage, socio-economic disadvantage and living in rural and isolated areas.

Award completions for Indigenous people remain low, although they increased from 606 in 1991 to 1,026 in 2000. In 2000, the main areas for completed awards were arts/humanities/social sciences (349), education (224) and health (209). Numbers of completed awards by Indigenous people continue to be very small in science and engineering. Indigenous people are less likely to hold a post-school qualification, particularly a bachelors degree or higher award, compared

with other Australians. They also are far more likely to have left school before completing the highest level of secondary schooling available.

Table 1.12 Indigenous Students by Gender, 1991 to 2000

	Commencing Students			All Students		
Year	Male	Female	Total	Male	Female	Total
1991	970	1,591	2,561	1,820	2,987	4,807
1992	1,018	1,673	2,691	1,893	3,212	5,105
1993	1,241	1,743	2,984	2,170	3,408	5,578
1994	1,296	1,940	3,236	2,415	3,849	6,264
1995	1,386	2,237	3,623	2,573	4,232	6,805
1996	1,376	2,248	3,624	2,604	4,352	6,956
1997	1,556	2,472	4,028	2,818	4,643	7,461
1998	1,453	2,544	3,997	2,812	4,977	7,789
1999	1,543	2,597	4,140	2,928	5,073	8,001
2000	1,296	2,214	3,510	2,610	4,740	7,350

Source: Department of Education, Science and Training Statistical Collection.

Students from rural and isolated areas continued to be under-represented in higher education throughout the 1990s. While the number of students from rural areas increased by about 20 per cent, their proportion of the total student population remained stationary at around 18.5 per cent. The situation was similar for isolated students with the numbers of students increasing by 18 per cent but their proportion of the general student population remaining at around 1.9 per cent.

Students from socio-economically disadvantaged backgrounds are identified on the basis of the postcode of their permanent address, with those whose postcodes falling within the lowest 25 per cent of the population of given region being deemed to be of low socio-economic status background while those in the highest 25 per cent are deemed to be socio-economically advantaged. Based on statistics using this method, throughout the 1990s students from socio-economically disadvantaged backgrounds increased significantly in number but their proportion of the general student population remained static.

Research and Output and Impact

While there are various technical difficulties associated with the measurement of research performance, a number of indicators point to considerable success arising largely from increased investment in research over the past ten to fifteen years and changes in policy direction. As indicated in an earlier section, over the past decade research income attracted by universities from industry increased considerably. Research productivity in terms of the number of publications and patents also increased. Between 1981-85 and 1994-98, Australia's total production of scientific papers almost doubled (58,265 to 101,711) as did the total number of citations (from 161,562 to 363,762) (Salter et al. 2000, Table 36). Over the same period, Australia's global citation impact increased from 2.8 to 3.6. According to more recent analysis (Butler 2001), Australia's share of international publications indexed by the Institute for Scientific Information on the Science Citation Index grew from 2.2 per cent to nearly 2.8 per cent between 1991 and 1999. Citations increased in line with this increased output.

In 1999, the Australian Research Council and the Commonwealth Scientific, Industrial and Research Organisation (CSIRO) jointly commissioned a study to explore the nature and extent of the relationship in Australia between innovation – as expressed in patenting activity – and scientific research. Patents are an important indicator of the character of national innovation. In

1979, Australian-invented patents accounted for 0.45 per cent of all US patents and by 1998 this share had increased to 0.5 per cent. However, in terms of patenting in relation to gross domestic product, Australia falls below the world average. In 1998, some 800 patents were granted to Australian inventors but an additional 548 would have been necessary to bring Australia's performance up to the trend line (Nairn et al. 2000)

Despite the progress in research outputs and impact, Australia's gross expenditure on research and development is still relatively low per capita. In 1986, Australia was in 14th place internationally and by 1997 it had improved its position only by one place to 13th (Salter et al. 2000, Table 3). Australia's position is more favourable in terms of higher education expenditure on research and development, and it improved from 11th to 9th over the period 1986 to 1997. In terms of higher education expenditures on research and development as a percentage of gross domestic product, Australia improved its international rank from 13th in 1986 to 10th in 1997. Over the same period, higher education expenditure on research and development increased from 0.42 per cent of gross domestic product to 0.45 per cent.

1.5 Conclusion

This chapter has provided a summary account of the substantial changes that took place in Commonwealth higher education policy and in the Australian higher education sector throughout the 1990s. Admittedly, there was no single turning point of great consequence that dramatically changed the direction and character of the sector, such as the end of the binary system and the establishment of the Unified National System in the late 1980s. But collectively a combination of important Commonwealth policy decisions combined with institutional initiatives led to quite fundamental change.

As a result of these changes, Australia's higher education sector is far better equipped than a decade ago to meet the needs of a modern society and the new pressures associated with globalisation and increasing cross border trade in educational services. Universities are larger and more comprehensive, with more entrepreneurial skill and less dependence on Commonwealth funding. They are more international in orientation and have been highly successful in attracting large numbers of international students. Research links with industry are stronger and research outputs and impact internationally have been enhanced. On the other hand, access and equity efforts have met with mixed success, while many academic staff have found the pace of change difficult.

These themes will be traced in much greater detail in the following chapters which deal with educational developments; research and research training; access and equity; internationalisation; quality assurance; staff and students; and governance.

The Only Constant is Change

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When I became Vice-Chancellor of Griffith University in 1985 change was not the key word on my mind. Nor was I encouraged to think that a lot of change was needed. The University was a small newcomer to the family of Australian universities with 3500 student enrolments (2920 equivalent full-time student units). Thoughts were more about continuity and developing a place in the international traditions of scholarship.

Griffith was, nevertheless, different – partly by design and partly in response to external constraints. It was, with Murdoch and Deakin, the last of the 'Plate Glass', 'Greenfield' universities that, like contemporary new universities in the United Kingdom and Canada, adopted the interdisciplinary school approach to university organisation. Foundation commitments to areas such as environmental studies, Asian studies and cultural studies were novel at the time and fitted well with the school model. But regulatory constraints, combined with the University's own decisions, left Griffith without representation in any of the professions. Medicine, law, accounting, education, engineering, and so on, were missing.

Initially therefore thoughts about development focused on the need for new areas of teaching and research. Proud as it was of its strong research record as a young university, and of its deliberately egalitarian approach to teaching (small classes, informal relationships between staff and students and equal access for both to, for example, parking and common rooms), the University nevertheless suffered in the local scheme of things because it could not present a broad enough set of courses to prospective students.

At the same time, the long-term consequences of the post oil-shock and increasingly deregulated and market-driven economy were delivering a derivative shock to the employment prospects of graduates generally. The automatic full employment of virtually all graduates, a feature of most decades since World War II, was increasingly a thing of the past. It was obvious that university planning could no longer take place under a broad assumption that 'we know what is best for students and employers'. (I exaggerate, but there was still a good deal of this sort of thinking around in universities at that time.)

Responsiveness to employment markets required a major shift for universities like Griffith, which had enjoyed the opportunity to be more concerned with the general attributes of a graduate citizen and with the creation of new areas of activity and employment (environmental sciences for example), rather than having to focus on the development of job-specific and immediately applicable skills in particular employment areas. The University was rightfully reluctant to abandon its foundation principles (which still stand in its mission statement) but needed to be better positioned to compete with other professionally equipped universities.

Internal debates about these issues, however, were eclipsed by the publication in December 1987 and July 1988 of the Green and White Papers of the Hawke Labor Government, under the auspices of its Education Minister, John Dawkins. Many things have been said and written about the Dawkins policies. Critics speak of the 'Dawkinisation' of Australian universities and deprecate 'Dawkins' universities, meaning those colleges and institutes of the college of advanced education sector which were transformed into universities as members of the Unified National System. Others saw the changes as opening new opportunities and as a major shift towards democratic ideals of education.

The abolition of the binary system, together with the requirement that institutions with less than 2000 full-time equivalent students merge with other institutions, was a response to the increasing difficulty of rationalising, and policing, the boundaries of the colleges of advanced

education and university sectors, particularly in relation to research. Many college of advanced education and institute academics, active in research, resented their exclusion from research funding arrangements. At the same time, not all academics in universities were observed to be productive in the research for which they were funded.

As a small, narrowly based university, Griffith faced new competitive pressures. The enhanced status of former colleges of advanced education together with the undiminished strength of the older universities combined in a pincer movement to put pressure on Griffith's scope and prospects.

The second major strand of Hawke Government policies, in effect the transformation of Australian higher education into a ‘mass’ education system, proposed a target ‘increase in Australia's annual output of higher education graduates from about 88,000 [in 1988] to about 125,000 by the turn of the century.’ Minister Dawkins had earlier suggested that ‘a major expansion of higher education places for youth, possibly of the order of 75,000 places by the turn of the century’ was necessary if Australia was to cater for the anticipated increased demand for higher education driven by improving retention rates in secondary education. This was to be achieved partly on the basis of new public funding and partly through the user-pays mechanism of the highly innovative Higher Education Contribution Scheme. These targets now appear conservative when compared to the sustained growth that has in fact been achieved. Over 170,000 Australian students completed award courses last year (2000), and by 1997 the number of students at universities had doubled from 1980.

For Griffith, the policy environment offered three options: stand-alone; merge with another larger institution; grow by absorbing other institutions. By choosing the third option Griffith has been fortunate to be able to transform itself into a large university with 26,000 student enrolments (21,300 equivalent full time student units) and six campuses in the Brisbane-Gold Coast region. Four amalgamations brought a much needed increase in the University’s range of courses (education, the visual and performing arts, tourism and hotel management, for example) while the placement of the campuses, in due course including the new Logan campus, in Australia's most rapidly growing population region brought additional funded load with attendant opportunities for opening new areas of teaching and research.

While the processes and negotiations leading to the signing of binding amalgamation agreements were themselves sometimes lengthy and difficult, the business of making them work was, and to some extent remains, a long process requiring constant monitoring of sensitivities, great flexibility and a willingness to modify systems and achieve equalisation of opportunities. The blending of cultures, careers and futures involved in amalgamations can produce hybrid vigour, or it can produce a potpourri of envy, confusion and frustration. In the latter circumstances, the lowest common denominator is all too often the tempting way forward.

Griffith has emerged an expanded, more robust and exciting university as a result of its growth and amalgamations. I also hold the view that the same can be said for other universities that, like Griffith, participated vigorously in the opportunities generated by the growth and diversification of the higher education system during the last decade of the twentieth century.

Of course, not everyone shares this view. Some within Griffith think that the costs of growth have outweighed the benefits, and no doubt it is true, despite our best efforts, that the benefits (and costs) of change have not always been evenly distributed.

In the higher education community more generally it is common to hear complaints about the regulatory pressures towards uniformity and standardisation that are said to have flowed from the Unified National System. This is currently a more commonly expressed view than the view I hold, that the system has diversified as it has grown.

This issue deserves more careful empirical study than it has so far received. I offer the conjecture that the range of activities of Australian universities in 2001 is significantly greater than that of the combined college of advanced education and university sectors before 1987. For some commentators, however, the legitimisation of research, for example, in all higher education institutions is still seen as an unwelcome source of competition for scarce funds, generating a negative cast of comment decrying the widely shared aspiration of universities to be, or become, 'research universities'. For some critics of the Unified National System, the word 'unified' is given the perjorative meaning of 'uniform'. And uniform is taken to mean, for example, that all institutions aspire to be involved in research, or in teaching law, or medicine and other prestigious courses, and no one is willing to be a 'teaching-only' institution. On the part of those who criticise such aspirations there is a tendency also to applaud the teaching-only colleges in the United States, or to commend the still essentially ternary Californian system.

No doubt the Australian developments of the nineties were not perfect; there is always ongoing need for reform and development. But it is possible, I suggest, that Australia has hit on, or is at least headed towards, something very worthwhile, something not attempted in other countries, and which may well be highly prospective in terms of productive, democratic education: namely the creation of an approach to post-compulsory school education free of government prescribed sectors. In such an environment, individual institutions could develop their own shape and purpose, in principle in as many styles as there are institutions, meeting the diverse needs of students and their families, and of employers, in an interactive and developmental mode.

Dawkins did not go that far. He changed Australia's ternary system, of vocational education and training (VET), advanced education and universities, to a binary system of universities and VET institutions (though in more common usage the merger of the college of advanced education and university systems was referred to as the abolition of the 'binary' system). The still vexed issue regarding the interface between vocational education and training and universities is, perhaps, an issue only if it is assumed that we must have government-imposed sectors.

The experience of the Unified National System can, therefore, be viewed in two lights. It can be seen as an enforcement of uniformity on two hitherto usefully distinct types of institution—a heavy-handed regulatory and bureaucratic intervention riding roughshod over worthwhile 'natural' diversity. Or it can be seen as the first step towards the abolition of government-imposed sectoral boundaries, boundaries which are legislated and perhaps politically driven, and which erect fences in a landscape which otherwise might well show less demarcation. (In this connection, we need to recall that the advanced education sector itself was a creation of government during Malcolm Fraser's period as Minister for Education.)

Could Australia now take a further step? Instead of falling back from the position it has reached, could it dare to adopt an approach to policies about, and funding of, post-compulsory education which does not prescribe categories of institution and their related (approved) activities, and which funds activities as such, by those demonstrating a capacity and willingness to pursue them, without the need for prior sectoral classification?

Such a development would generate some difficulties, no doubt, but a good proportion of those difficulties would, I suggest, diminish in significance if the legitimate intervention of government in education is seen as totally concerned with improving opportunities and outcomes for all citizens and not at all concerned with protecting the status and market positions of existing interest groups and institutions. The latter approach would be in keeping with what has become almost a mantra in government policy since the early 1980s, that the role of government is not to pick winners but to create the environment in which the winners pick themselves.

It would be arrogant to suggest that the blending, indeed the abolition, of sectors within Griffith during the nineties provides a model for a sector-free approach to post-compulsory education, and misleading to suggest that an intention to create such a model was explicit in the

governance and management processes involved. But I think it is worth encouraging serious study of institutions, which, like Griffith, have absorbed elements of each of the three pre-1987 sectors – a pre-1987 university, three former colleges of advanced education campuses and a former technical and further education college. In my view, the success of these amalgamations depended more on the abolition of sectoral distinctions in the post-amalgamation university than on any other single factor; that is to say it depended on a high degree of operational and credible inclusiveness.

I do not wish to convey the false impression that Griffith is a tension-free institution where everyone is satisfied, either with the policies or management practices of the University, or the funding policies of the Government. But it is, or tries to be, an institution where no one is pre-judged and classified so that they are excluded from particular opportunities and competitions.

Achieving this equality of opportunity necessitated the taking of hard decisions that were not universally popular at the time. There were those who, for example, resented the financial support given to areas which were new to research. While there may still be valid grounds for such a view, especially under Government policy and funding frameworks which impose narrow and rigid criteria on institutions, its proponents overlook the benefits which accrue in terms of opportunities for community involvement, and of opportunities for innovative collaboration across new or seemingly unrelated fields of study, for example law and environmental science, the visual arts and education, information technology and exercise science, and civil engineering and information technology. Nurturing the flexibility needed to adapt and meet the changing needs of industry and the community is essential if institutions are to take their place as key elements of the knowledge-based economy.

It might be thought that the vision of a sector-free, post-compulsory education system would mean that there would be no operational differentiation between groups of institutions and no market segmentation. On the contrary, as with other activities in our society, descriptive and distinguishing terms would no doubt develop for various practical purposes. But the terminology would not be imposed by government and ideally would not be allowed to become tied to protective regulatory and funding arrangements.

The prospect of education free of government prescribed sectors might also seem to threaten quality assurance policies and mechanisms. The reasoning seems to run as follows: the term ‘university’ is protected by legislation in Australian States and Territories; the public (in Australian and in overseas markets) associates the term university with quality outcomes; it is prudent, therefore, to control the number and quality of universities.

Unfortunately, the argument exploits an unfortunate tendency in post-compulsory education, whereby labels, as such, are assumed to confer status and prestige and to imply quality. The prestige of institutions at the primary and secondary levels of education does not seem to depend to the same extent on whether it is called, for example, a ‘school’ or ‘college’, and quality assurance systems at the primary and secondary levels are agreeably free, to date at any rate, of a tendency to make labels part of the process of quality assurance. It is difficult to see why such an approach should not apply at the post-compulsory level. Of course, it is predictable that, given the status-conferring power of the word ‘university’ within existing sectoral arrangements, there would be a continuing preference for the term in an environment free of government-imposed sectors. Over time, however, other terms might emerge and be seen to fit more effectively with the purposes of particular institutions as they operate and develop in various markets.

Some will see the idea of post-compulsory education free of government-imposed sectors as completely fanciful. That’s what I would have thought if someone had suggested to me in 1985 that Griffith would grow to 26,000 student enrolments in 2001.