

National Board of Employment, Education and Training

Demand for and Dimensions of Education and Training

Commissioned Report No. 39

The Demand for Education and Training

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Foreword

A key finding of the February 1994 *Wiltshire Review of the National Board of Employment, Education and Training* was the importance of cross-sectoral issues and the need for the National Board to provide an important focus for these issues. The Board recognises the importance of providing a cross-sectoral perspective to employment, education and training portfolio matters and is seeking to identify measures to improve and extend collaboration between higher education, vocational education and training, and senior secondary education, in order to maximise benefits to industry and the wider community.

On 30 June 1994 the Board received the following reference from the Minister for Employment, Education and Training, the Hon. Simon Crean, MP:

I request the Board to investigate and report on measures (including dissemination of existing best practice) whereby collaboration between higher education, vocational education and training and senior secondary education might be improved and extended to maximise the benefits to industry and the wider community of existing funding, without distorting the respective missions of the sectors. I am particularly, though not exclusively, interested in encouraging and facilitating collaboration which can improve the sectors' collective response to the needs of industry and non-metropolitan communities and the scope for increased collaboration in open learning approaches to this end.

The two studies in this report were commissioned by the Board to assist in developing its advice in respect to the reference and to provide information to those Australians working with and within the sectors.

The Demand for Education and Training was undertaken by Deloitte Touche Tohmatsu. It examines employer demand for education and training, with particular emphasis on employer requirements of new graduates across the education and training sectors. The aim of the study is to identify how well the current education and training system is meeting the needs of Australian employers. The study reveals that employers clearly distinguish between graduates across the education and training sectors and have distinct expectations and requirements for each.

Dimensions of Education and Training: Australia from 1988 was undertaken by Professor Gerald Burke of the Centre for Economics of Education and Training, Monash University provides. It provides information on growth in Australia's education and training sectors and examines the levels of growth needed to meet the Finn targets.

The Board notes that information on cross-sectoral collaboration is not readily available. Indeed, it is fair to say that more work needs to be done to compile material to assist those pursuing cross-sectoral initiatives and developments.

This Commissioned Report is one in a series of steps taken by the Board to provide information and guidance on the important matter of cross-sectoral collaboration. The National Board will continue to look at cross-sectoral issues.

Peter Laver
Chair
National Board

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Executive Summary

The National Board of Employment, Education and Training commissioned Deloitte Touche Tohmatsu to undertake a consultancy to identify how well the current education and training system is meeting the needs of Australian employers. The purpose of the consultancy was to examine employer demand for education and training, with particular emphasis on employer requirements of new graduates.

Approach

The methodology for the consultancy comprised three main elements. The first element involved a literature review of current research into employer requirements of graduates, focusing on employer perceptions about the extent to which the education and training systems currently meet industry requirements.

The second element involved a national telephone survey of employer recruitment practices, experiences and future expectations in relation to graduates across the education and training sectors. The Hawthorn Institute of Education was commissioned to undertake the survey. A representative sample of 400 employers was contacted and 180 completed surveys were received.

The final element consisted of twenty-seven case studies conducted with employers from a representative range of industries and geographic locations. The case studies analysed employer approaches to selecting graduates, their expectations of the knowledge and skills of new employees, and their views on whether graduates from the education and training sectors meet their expectations. The case studies were intended to provide more detailed qualitative data to supplement the information gained in the national survey of employers.

Findings

The literature review suggests that employers consider that students need more opportunities to develop their communication and social skills within the higher education system. It also suggests that employer selection decisions are based on a wide range of information, with academic

achievements representing only one component of this. The literature review highlighted the fact that the market for graduates operates on the basis of both objective and subjective information, suggesting that education and training institutions need to complement the disciplinary and technical training of students with a broader range of relevant experiences.

The National Survey of Employers identified employer expectations and perceived shortcomings and strengths of graduates from the education and training sectors. In summary, the survey found that employers expect school leavers to have well-developed skills in listening and speaking, reading and writing, and following instructions. The major perceived shortcomings among school leavers include inexperience and lack of specific skills, while their major strengths are energy, enthusiasm and willingness to learn.

In relation to TAFE graduates, employer expectations focus on listening and speaking, teamwork, interpersonal, and reading and writing skills. Among the shortcomings identified was the need to develop a stronger work ethic, and strengths were identified as strong technical skills and considerable knowledge of the workplace.

For university graduates, emphasis is placed on listening and speaking, problem solving, reading and writing, teamwork, and interpersonal skills. Shortcomings were identified as unrealistic expectations about the work place, while highly developed problem solving abilities were nominated as a strength.

The employer case study findings were largely consistent with the national survey. Similar employer expectations, as well as shortcomings and strengths of graduates emerged. The case studies also revealed that employers place more emphasis on personal attributes such as oral communication, a willingness to learn, team skills and initiative, than on academic results.

Work experience is used as an additional tool for gaining information about graduates. Employers do not place a strong emphasis on demonstration of specialised skills. Rather, willingness to learn is considered more important, as employers believe most skills can be developed through internal training and experience, whereas attitude is more difficult to modify.

The research highlighted the fact that, while future demand for TAFE and university graduates is likely to increase, the demand for school leavers is likely to significantly decrease and be more concentrated in a narrow range of industry sectors.

While employers were able to highlight significant shortcomings in their new recruits, there was not necessarily a strong expectation that education and training institutions should be solely responsible for developing these.

Nevertheless, employers seek indicators of character, personality and breadth of skills and interests, and consider that educational institutions should remark on such attributes.

Conclusions and Analysis

This consultancy has revealed that employers clearly distinguish between graduates across the education and training sectors and have distinct expectations and requirements for each.

Overall, the research did not reveal a strong desire for higher levels of cross-sectoral collaboration from an employer perspective. Nor did employers convey detailed views about the need for changes to the academic curriculum taught in the education and training systems. They did, however, express concern about the limited consultation between the education sectors and industry, in developing curricula and facilitating work experience opportunities for both students and lecturers.

The national survey and case studies highlight the difficulties employers experience in selecting graduates from the education and training systems. While employers place some emphasis on academic results, they also use more subjective indicators such as personal attributes and work experience to gauge the potential value of employees.

Closely linked to this is the fact that employers value personal attributes more highly than specific technical or specialist skill levels of new graduates. Employers expressed a belief that, in general, the education and training sectors do not place sufficient emphasis on the personal development of students nor do they provide adequate career guidance and advice to students. It is an absence of these personal attributes and general knowledge about the world of work that appears to be of more concern to employers than an absence of specific technical or academic skills.

Suggested Areas for Further Research

The research findings suggest there would be benefit in exploring approaches to documenting and measuring personal qualities of graduates in a valid and reliable manner. At present, employers infer this information in an ad hoc manner from a range of sources such as interviews, references and activities listed in applicants' curriculum vitae.

Further research may also be warranted to explore the potential for some form of 'enterprise education' and the role which business and industry should fulfil in conjunction with education providers in its delivery.

Finally, a number of employers commented that the study should be extended to include experiences of graduates who have been in the workforce for two to three years. This would provide a fuller picture of the skills deficits of new graduates and would allow comparison of their identified needs and expectations with those identified by employers.

Terms of Reference and Methodology

1.1 Background

Research is currently being undertaken by the National Board of Employment, Education and Training (NBEET) into cross-sectoral collaboration between the education and training sectors. NBEET is seeking to identify measures to improve and extend collaboration between higher education, vocational education and training, and senior secondary education, in order to maximise benefits to industry and the wider community.

Deloitte Touche Tohmatsu was commissioned by NBEET to undertake a detailed study to identify issues on the demand side of education and training. The study sought to identify how well the current education and training system is meeting the needs of employers.

1.2 Terms of Reference

The purpose of the study was to examine employer demand for education and training, with particular emphasis on employer requirements of new employees. In conducting the study, emphasis was placed on achieving the following outcomes:

- seeking employer views as to the basis on which they select graduates from each of the education and training sectors for employment;
- examining employer perceptions about new employees, involving probing employer expectations as to the skills graduates from each of the education and training sectors actually have and are able to apply in the workplace, including specialist knowledge and skills, generic knowledge (including general knowledge and awareness), and generic skills (such as communication skills and interpersonal skills); and
- determining the extent to which graduates from each of the education and training sectors actually meet their selection criteria and expectations by focusing on identifying employer perceptions regarding the strengths and shortcomings of graduates; gaining employer views on any changes to the education and training sectors that would ensure supply more effectively matches employer demand; and identifying any strategies employers adopt to cope with shortcomings of graduates.

1.3 Methodology

The methodology adopted for this study included the development of a detailed understanding of current research into the field of employer requirements of graduates across the education sectors; an extensive national telephone survey of employer recruitment practices, experiences and future expectations in relation to graduates across the three sectors; and a number of detailed case studies on employer experiences with graduates from a range of industries and in various geographic locations.

The assignment was directed by a Steering Committee consisting of:

Professor Gordon Stanley	Chair, Higher Education Council
Mr Brian Pickett	Member, NBEET
Mr Robert Bluer	Counsellor to NBEET
Dr Nick Hartland	Research Officer, NBEET Secretariat

Information relating to each of the three key components of the study is outlined below. Detailed methodologies for each section are included in the body of this report.

- **Literature Review**

The literature review examined research into employer requirements of graduates across the education and training sectors, focusing on employer perceptions about the extent to which the education and training systems currently meet industry requirements.

- **National Survey of Employers**

The Hawthorn Institute of Education (affiliated with the University of Melbourne) was commissioned to undertake the National Survey of Employers. The purpose of the survey was to gain an overall analysis of current and anticipated usage of graduates from each of the education and training sectors by employers and their experiences with these graduates. Approximately 400 employers were contacted for the survey and 180 completed questionnaires were attained.

A random sample of businesses was drawn from a comprehensive Telecom listing to ensure that a representative sample of firms across industries and of different sizes was included in the phone survey.

Due to difficulties in gaining responses from smaller businesses and the need to include large employers of graduates in the research, this sample was supplemented by using the Business Council of Australia membership list and the Australian Human Resource Institute membership listing.

Businesses were initially approached by telephone and, if agreeable, participated in the survey by phone or, alternatively, the questionnaire was faxed to them. The latter occurred in the vast majority of cases.

The survey asked questions relating to employer recruitment patterns, their expectations of graduates across the three sectors, their experiences and their likely demand in the future for graduates.

- **Employer Case Studies**

Twenty-seven case studies were conducted to analyse employer approaches to selecting graduates, their expectations of the knowledge and skills of new employees, and their view on whether graduates from the education and training sectors meet their expectations. The case studies were intended to provide more detailed qualitative data to supplement the statistical information gained in the Survey of Employers.

Case studies were selected to ensure a representative cross-section of states, metropolitan and non-metropolitan areas, and industry sectors were included. Case studies were conducted with a senior human resource manager and a senior line manager wherever possible to ensure a broad assessment of graduates from both a training and operational perspective.

Employers were selected from two sources. The major source was the survey conducted by the Hawthorn Institute. The survey identified companies willing to participate in a more detailed case study. To ensure adequate regional representation, regional development organisations and local Chambers of Commerce were also contacted to identify appropriate employers in non-metropolitan areas.

Common themes emerging across the three components of the study are highlighted in Chapter 5.

Perspectives from the Literature Review

Research in the area of industry requirements of graduates across the education sectors has predominantly concentrated on supply aspects, such as the numbers of graduating students, their qualifications, competencies and employment.

Within Australia, this focus has more recently evolved to include analysis of the specific requirements of employers with respect to the skills and abilities of school, TAFE and university graduates, and the perceptions of employers about the extent to which the education and training system can deliver graduates who meet industry requirements.

2.1 Employer Requirements and Expectations of the Education and Training System

Research on the current reform agenda for the Australian education system has identified the increasingly competitive society and the demands this competition places on the education system. This competitive environment has emphasised the growth and diversity of higher education institutions and the increased accountability of institutions to consumers and the public. Responsibility for education is now being attributed to individuals and enterprises rather than sole responsibility residing with government (Economic Planning Advisory Council 1992).

Satisfaction of customer requirements by the education system has been addressed in a report on the quality of higher education in Australia (NBEET 1992). This study captured the qualifications, skills, experience and personal qualities that employers seek in their recruitment of graduates. Communication and social skills were identified as the key skills required of new and experienced graduates. Oral communication skills were ranked second in importance to academic results in the screening of new graduates by employers. Employers consider new graduates to be lacking in these skills and that these graduates have limited ability to apply their academic learning to the workplace.

This study highlights the need for greater opportunities for students to develop their communication and social skills within the higher education system. The study also raises the issue of the extent to which communication skills should

be developed through other avenues such as the family, schools and personal effort before the commencement of university studies. This issue was considered to be crucial given the importance of communication skills to industry.

The quality of the education system has also been addressed by the Business/Higher Education Round Table (1992). Commissioned surveys by the Round Table have identified a general consensus regarding the high quality of the best Australian graduates and a growing disparity between the best students and those who are only achieving pass results. Key education and business leaders observed that these latter students experience difficulties in applying knowledge and disciplines to a work environment. The absence among students of an ethos of excellence in business was also identified as a fundamental problem.

Research has also shown a high degree of uniformity among education and business leaders as to the desired future objectives of the education system. Key relevant objectives include:

- a broad education system which will ensure that graduates have high order skills in the areas of oral and written communication, well developed interpersonal skills, numerical and economic literacy and a good grounding in the study of Asian culture and values;
- tertiary courses which equip students to apply knowledge intelligently;
- graduates whose value system includes a work ethic; and
- students and employees who are accepting of change.

The Round Table surveys identified a disparity between business and university attitudes about the importance of communication skills and theoretical knowledge. Business respondents considered communication to be one of the most important characteristics in selecting graduate recruits, ranking theoretical knowledge as seventh, whereas the view of university respondents was that only moderate emphasis was given to communication, with theoretical knowledge receiving the greatest emphasis. Beyond these differences, there was agreement about the importance given at university and in business recruitment to the capacity to make decisions and solve problems, learn new skills and procedures, apply knowledge to the workplace, and work with minimal supervision (Business/Higher Education Round Table 1992).

At a more detailed level, several tertiary institutions have contributed to the debate about employer perspectives of graduate skills. Employers have identified communication, teamwork and organisational skills as being well demonstrated by vacation employment students, while problem solving, leadership and initiative were exhibited less by students (Lewis & Ruchel 1993).

Employer responses to a recruitment survey of graduates at Griffith University found that motivation to work, a positive attitude, a willingness to learn and reliability were rated as top attributes in both importance and demonstration (Meade & Andrew 1995).

A Graduate Labour Market Survey of career advisers and graduate recruiters established a set of four attribute and skill groups—cognitive, communication, interpersonal and work organisation/situation attributes and skills. The sub-areas of the skills and attributes in which recruiters were most likely to expect all graduates to be proficient included:

- effective oral communication skills;
- comprehension;
- effective listening skills;
- logic and orderly thinking; and
- flexibility and adaptability.

The sub-areas of the skills and attributes in which recruiters were not highly likely to expect all graduates to be proficient included:

- capacity to manage the work of others;
- public speaking;
- presentations to meetings;
- entrepreneurial flair; and
- the capacity to work unsupervised and to take responsibility

Responses regarding the skill and attribute deficiencies in new graduates, while not suggesting major problems in most sub-areas, again seem to indicate problems in the communication area (Guthrie 1994).

Recent media coverage of graduate requirements in industry has reported that the largest private and public employers need to provide training in communication skills for their graduate workers. Employers are reported as finding that the major deficiencies in graduates were inadequate written communication and verbal and interpersonal skills (*Sydney Morning Herald* 29 Jan. 1994).

2.2 Youth Labour Market Recruitment Processes

The manner in which the youth labour market operates has some significant implications for the education system. A study into the required competencies and recruitment processes of industry has identified good interpersonal and communication skills, literacy, numeracy and motivation as the major

competencies sought in staff, with graduates also expected to show initiative, problem solving skills and excellent interpersonal skills (Stanton 1995). Business and industry groups have reported that a variety of mechanisms are utilised to assess applicants' competencies including interviews, psychological testing, reference checks and literacy and numeracy tests.

The majority of the business and industry participants involved in the above project did not find school based assessment useful in the selection of applicants. The report found that companies value evidence of extra curricula and work related experience as a more reliable indicator of the competencies of an applicant. Confidence in the assessment process and the view that Key Competencies should not be assessed only in the school context were identified as prerequisites for assessing applicants based on Performance Level in all Key Competencies.

A study of employers involved in the youth labour market revealed a general value placed on the attainment of school certificates. However, 95 per cent of employers interviewed did not use school grades in selection processes, and there was little evidence that employers used the school certificate as a major sorting instrument for prospective employees. In selecting school leavers, employers look primarily for an attitude of keenness and willingness to work, an interest in the area and experience in customer service. Only 11 per cent of employers surveyed stated that they looked for evidence of specific education or training courses when recruiting (Keating 1995).

Consistent with this research, the Schools Council has released a discussion paper encouraging employers to assist schools to develop a report card or list of achievements by which to judge high school leavers, where scores would be given for abilities such as teamwork or problem-solving. The paper contends that this would develop a structured 'pathway' from the classroom to the workplace (Schools Council 1994).

2.3 Cooperative Education

Research is now giving more recognition to the relationship between education and the economy. In addition to the focus on perceptions of graduates, business demands have also been investigated from the perspective of linkages with the education sector. A study into collaborations between industry and institutions has identified a number of factors necessary for effective collaboration (Lawrence 1990), including those listed below.

- Economic and social development imperatives will result in increased levels of collaboration and assist in determining the nature of intersectoral relationships.

- The infrastructure required to support collaboration needs to become more flexible and dynamic, suggesting that an increasing number of collaborative arrangements will emerge.
- Relationships with the private sector will become longer term.

The extent to which employers and professional bodies should influence the curriculum at the university level and the issue of academic freedom were addressed in a symposium of the Western Australian Office of Higher Education *Degrees for Change? Relevance, Control and Pressures in the Undergraduate Curriculum*. Despite problems such as salary differentials, timing and opportunity costs, staff exchanges were considered the most important mechanism for the achievement of relevant input into overall curriculum planning and development. These secondments were considered underdeveloped as a mechanism for industry and the professions to provide input into curriculum. Student work experience, while not directly able to exert an influence on curricula, was also proposed as an extremely valuable opportunity for students to gain real world context to assist in learning and skill development (Eastwood 1990).

A recent initiative designed to increase the relevance of university education is the Cooperative Education for Enterprise Development Program administered by the Higher Education Division, Department of Employment, Education and Training (DEET). This Program is designed to forge links between theory and practice, provide valuable workplace experience for students, encourage the recruitment of able graduates into cutting-edge industries, and promote access by industry to university facilities and expertise. Relevant findings of an evaluation report of the Program in 1994 found that students benefit considerably from the Program in attaining suitable employment. The chance to deal with real industry problems was cited as an important benefit. Access to staff and university facilities was also an important factor for industry in the decision to join the Program.

Policy recommendations arising from the program evaluation addressed publicising the Program model to universities and the business sector; retaining the joint research and development focus important to the industry clients; and judging university applications for program funding against well-developed criteria such as the institution's recent activity in establishing industry links.

Examination of cooperative education models at specific institutions has demonstrated considerable success in the delivery of high quality, occupationally relevant, up-to-date and educationally-accredited material, presented to employees in the least disruptive and most cost-effective way. Conditions for success include jointly established bodies, answerable equally to the institution and employers, and institutions not constrained by a reluctance to be more than a sanctuary of ideas (Treyvaud & Davies 1991).

Advantages of the cooperative education approach at the Queensland University of Technology included:

- the provision of a supportive informal environment for students to take risks and experiment, which complemented the more structured formalised learning context of the university;
- transitions between university and work which provided students with a unique learning opportunity and broadened the experiences of students undertaking technically-oriented courses; and
- enthusiastic support from employers, 80 per cent of whom believe the cost outlay of training students is being recouped by the organisation in the form of increased productivity.

Specific discipline studies have also examined the relevance of the education system in delivery of the needs of Australian industry. With respect to tertiary education in design, a 1987 study recommended that institutions responsible for the education of designers be encouraged to develop coursework specialism directed at growth areas of industry (Davis, Barry & Arch 1987). A further recommendation was the development of programs for continuing education to improve knowledge and abilities, both of practising designers and those more generally associated with the design process. An Institute of Engineers Search Conference in 1993 also recommended that industry/university links be strengthened in order to facilitate the transfer of industry information into education (Department of Industrial Relations 1993).

2.4 Conclusions

There are several key conclusions emerging from the relevant literature on employer requirements of new employees from schools, TAFEs and universities.

- Employer selection decisions are formed on the basis of a wide range of information. Academic achievements are one factor in recruitment decisions, but employers are placing much greater importance on indicators of personal attributes, such as:
 - oral communication;
 - willingness to learn;
 - ability to follow instructions; and
 - initiative.

- The youth labour market operates on the basis of objective and subjective information. Employers give some credence to academic results, but also rely on highly subjective information which includes judgements of character, references, word of mouth and an assessment of the individual's interests. Excessive attention to academic results by the various education sectors is not proving particularly helpful to industry in their recruitment activities.
- Education and training sectors need to complement the disciplinary and technical training of students with a broader range of other relevant experiences. These additional experiences such as structured work experience, active learning skills and demonstration of initiative form the basis for discrimination in recruitment activities.

A detailed list of relevant Australian and international research discussed in this chapter is included in the References section of this report. The findings from the Literature Review outlined in this chapter provide a contextual basis for examining the results of the original research carried out in the National Survey of Employers and the Case Studies which are discussed in Chapters 3 and 4.

National Survey of Employers

3.1 Background

The purpose of the National Survey of Employers was to develop an overall statistical analysis of current and anticipated future usage of graduates from the education and training sectors and employer experiences with these graduates.

The Hawthorn Institute of Education was commissioned to conduct the survey because of its expertise in carrying out surveys of this nature and detailed experience in the education and training sectors. The Hawthorn Institute of Education is an autonomous institution which is affiliated with the University of Melbourne's Faculty of Education. The Institute specialises in applied research and providing vocational teacher education and development.

The survey instrument was primarily quantitative in nature with only three of a total of 20 questions requiring written responses. The survey consisted of a series of questions requiring employers to define their current and future recruitment practices, skills required of the school, TAFE and university sectors, as well as specialist knowledge, work experience and training. Three qualitative questions were included asking employers about positive attributes of new graduates, shortcomings of new graduates and their processes for overcoming these shortcomings.

Approximately 400 employers were contacted for the survey and 180 completed questionnaires were received. Detailed graphs outlining responses to each question are included in Appendix 1.

3.2 Methodology

There were three broadly defined sectors canvassed for the survey—'very small businesses', 'small businesses' and 'large companies'. These were drawn from membership lists of the Business Council of Australia and the Human Resource Institute, and a random sample of Telecom Australia listings. Specific information relating to the manner in which these groups were identified and details about the responses are outlined below.

The highest rate of return was received from large companies and the lowest from the very small businesses. Recruitment of staff and concern about their education and training did not emerge as a factor for businesses classified as very small, whereas the opposite was true for larger companies.

The table below provides a summary breakdown of the survey group.

Table 1: National Survey of Employers—Breakdown

Source	Rejections	Pending	Completed Surveys	Agreed to Case Study
Business Council of Australia	26	16	63	24
Human Resource Institute	35	99	109	31
Telecom	17	24	6	
Unidentified			2	
Total	78	139	180	55

3.3 Approach

The research process began with an initial telephone call to the nominated company, seeking to establish the name of the most appropriate person to contact about staff employment. This was followed by a direct call to that person to explain the survey.

The options of completing the survey over the telephone or by return fax were offered to people who agreed to participate in the survey. Most people chose to respond by fax. In these cases, the questionnaire and explanatory information relating to the project were faxed. For those who did complete the survey over the phone, it was possible to elicit more contextual details.

In cases where no reply had been received after several days, a follow-up telephone call or fax was made. This follow-up action revealed that some people had decided, on examination of the survey, that they were not able to complete it. These people were recorded as a 'pending' response rather than a 'rejection'. Discussion with these people often revealed that recruitment was static or declining and concern with education and training was not an issue. Other employers indicated that their company did not record the type of information required to complete the survey and, therefore, decided not to respond. In addition, several responses were received after the date on which the data was processed and these too were recorded as 'pending'. The number is insufficient to make a noticeable impact on the final result. Analysis of each of the sectors included in the survey is outlined below.

3.4 Very Small Businesses

A random sample of small businesses was prepared from a comprehensive listing provided by Telecom and over 40 were contacted. Many of these required several attempts before an appropriate person could be located and, once identified, they seldom felt qualified or able to respond as they did not consider themselves to be employers. They commonly identified themselves as 'users of labour' rather than as employers. It appeared that many of the listed businesses were too small to be involved in recruitment, and most declined to participate. Typical comments recorded by the researchers were:

- 'No staff, going broke, business up for sale.'
- 'We're not concerned about their education, we only want experience.'
- 'We just want people to do what they're told.'
- 'We don't employ people.'
- 'It's just me and my wife.' (or other family members)
- 'Don't employ graduates.'
- 'Low staff turnover.'
- 'Private residence, recorded message.'
- 'No fax.' (couldn't receive survey, not interested)
- 'All casual staff, education irrelevant.'
- 'There's only me and my husband, we don't employ people.'

Using this listing proved unsatisfactory. At the end of the survey period 47 companies were contacted from the Telecom list with a total of only six completed surveys. The researchers concluded that continuing with this sample would require a high level of resources and produce only a low yield. Furthermore, initial responses suggested that very small businesses are not involved in recruiting new employees and tend to rely on people already known to them, such as family. Responses for employers in this group suggest that expectations of the education and training qualifications of their employees are not important considerations for them.

3.5 Business Council of Australia

In addition to using the Telecom listing, member companies of the Business Council of Australia were contacted. Difficulties in contacting these companies were of a different order and arose from the large scale of their operations, rather than from the small scale noted above. However, once the appropriate person could be located these businesses exhibited a notably higher interest in the issues being researched and were more willing to respond.

Reasons for non-participation in this group were different from those of the businesses described above. In one case, the decision was made not to participate because the large size of the organisation meant that finding figures to answer the survey would require more time than was available before the survey's completion date. In order to maintain integrity, the company indicated it would rather not respond than provide misleading data. However, the company was extremely supportive of the research and agreed to participate in case studies.

This business's concern was reflected by other companies, many of whom could not provide the details required for the survey. For instance, in answer to Question Four, businesses were unable to specify the number of persons employed in particular categories. This may have reflected an unwillingness to spend the time necessary to find the data or inability to distinguish this data in their records.

As stated, the issues confronting companies in this group tended to stem from their large size and the complexity of their operations. Many consisted of numerous individual companies, each operating as an independent organisation without uniform policies or central records of employment and recruitment. In one particular case, the Head Office of a large company was unable to participate in the survey because it had no data or control over recruitment, which is individually handled by each of its separate business units.

A total of 105 companies from this list were contacted and 63 completed surveys were received. Contact with these companies suggested businesses with identified human resource functions were more likely to access data needed to complete the survey than the smaller businesses described above.

General impressions received from this group indicate that they consider secondary graduates to be generally ill-equipped for the workforce in terms of basic literacy and numeracy skills. Views were also expressed that university graduates are good on theory but weak on practice and tend to have unrealistic expectations about their career aspirations. One respondent put forward a belief that the distinction between TAFE and university has blurred with universities becoming more vocationally oriented and TAFE colleges becoming more theoretical.

Employers identified a trend away from employment for 'low level, routine' work and a move towards 'middle level and high level professional' work. The larger companies appear to have development programs in place for graduates concentrating on providing mentoring, job rotation and training to develop interpersonal/communication skills.

3.6 Small Business Organisations

A list of businesses with an identified Human Resource function was established by accessing the Australian Human Resources Institute membership listing. This proved successful, as the people contacted were more confident about responding, in contrast to the majority of those contacted from the Telecom lists. This resulted in a higher rate of agreement to complete the survey, although, in the final analysis, the rate of return was less than that of the Business Council of Australia members. Of the 243 companies contacted, 35 declined to participate and completed surveys were received from 109. This was in spite of considerable follow-up action through fax and phone reminders.

The impressions gained from this group reflected similar concerns to those of the Business Council of Australia members, although this was again affected by the size of the operation. The important factor for the researchers was that they could locate individuals able and willing to complete the survey.

3.7 Overview of Results

3.7.1 Selection of Graduates

The survey results show a high proportion of respondents employ graduates from across the school, TAFE and university sectors. A representative cross-section of industry groups was included in the survey with some concentration on the manufacturing sector.

The profile of survey respondents by employment size reflects the reliance in this survey on large firms with discrete human resource functions and recruitment policies. Smaller firms found it more difficult to answer the questionnaire and, when pursued, commonly responded that they did not have a defined policy for recruitment and did not actively focus on human resource development. A large number stated that they did not have recorded data necessary to answer the questionnaire.

Employers surveyed generally carry out large scale recruitment processes, with almost 30 000 people collectively employed by respondents during the last 12 months. This may reflect the fact that the majority of companies surveyed are large national employers recruiting employees at all levels, rather than suggesting a high level of general recruitment.

More companies tend to have formal recruitment programs for university graduates than for school and TAFE graduates.

A relatively small proportion of firms surveyed account for a large proportion of total recruitment. This suggests that larger companies provide the bulk of recruitment in Australia at present. It may suggest smaller businesses need people who are experienced and do not tend to actively recruit new graduates.

Employment opportunities for new graduates appear to be concentrated in large businesses in Australia at present. Approximately 50 per cent of firms surveyed employ fewer than five graduates from across each sector per year. The majority of employers indicated that they expect to increase the number of people they will employ over the next 12 months. This is supported by anecdotal evidence collected over the phone when people declined to participate because they were not in a position to recruit new employees.

Respondents indicated that their demand for school leavers over the next five years is likely to decrease while their demand for TAFE and university graduates is likely to increase. Almost all employers indicated their demand for graduates from across the three sectors is currently being met.

3.7.2 Employer Expectations of New Employees

In assessing applicants, employers nominated the most important skills for school leavers as listening and speaking, reading and writing, and following instructions. Greatest weight in assessing TAFE graduates is focused on listening and speaking, teamwork, interpersonal, and reading and writing skills. For university graduates, emphasis is placed on listening and speaking, problem solving, reading and writing, teamwork and interpersonal skills.

Overall, employers rated a far higher number of skills as being important for TAFE and university graduates, reflecting their higher expectations from these sectors. Employers place relatively less importance on discipline based skills such as mathematics, and greater emphasis on listening and speaking, teamwork and interpersonal skills.

This is confirmed, to some degree, by additional comments provided in answer to the open-ended questions. Attitude and willingness to learn are the most valued attributes of school leavers. For TAFE, their technical and practical work skills were nominated as their greatest strength. This was recorded as more highly valued in TAFE graduates compared with university graduates who recorded a low ranking in this area.

The most valued attributes of university graduates were nominated as thinking and problem solving skills. However, these features are not considered to be obvious attributes of school and TAFE graduates.

3.7.3 How Well are Expectations being Met ?

Employer responses suggest that they believe school leavers bring energy and enthusiasm to the workplace but are inexperienced and lacking in specific skills. Employers indicated that TAFE graduates have more knowledge about their potential work environments than school or university graduates but that they need to have a more strongly developed work ethic. Responses suggest university graduates sometimes have unrealistic expectations about the workplace and tend to experience difficulties working with 'non-graduates'. Employers indicated university graduates have unrealistic expectations of their own positions, salary entitlements and general importance. A common view expressed by employers was that university graduates need to be more willing to carry out mundane tasks in order to increase their total experiences and understanding of the workplace.

Employers indicate that graduates from all sectors are considered to have poor communication skills, including written, spoken and interpersonal communication. The ability to work as a team member was recorded across all sectors as a positive attribute of new graduates. Computer skills were also noted as a strength across the three sectors.

With regard to specialist knowledge of graduates, the survey results indicate that this is more important for TAFE and university graduates than school leavers. Overall, the results suggest that while specialist knowledge is important, other forms of knowledge, including workplace and life experience, are also important.

The majority of employers surveyed do not place a strong emphasis on work experience for school leavers. However, more than 50 per cent believe this is important for TAFE graduates and 60 per cent of employers identify work experience as important for university graduates. In the qualitative responses, employers suggested that TAFE graduates are considered to have the best technical skills and work experience.

3.7.4 Future Trends

Ninety per cent of participating employers believe their requirements for TAFE graduates will remain constant or increase over the next five years. Ninety-nine per cent of respondents believe there will be no change or an increase in demand for university graduates. The trend for school leavers was noticeably different with 59 per cent of respondents indicating their demand for school leavers is likely to decrease.

The survey also revealed that employers intend to increase all types of training for new graduates over the next five years. The largest increases are anticipated in the use of in-house training and private providers.

3.8 Conclusions

The survey revealed a number of trends relating to employer expectations and experiences with graduates across the school, TAFE and university sectors.

- Employment opportunities for new graduates appear to be concentrated in large businesses. Small businesses tend to recruit experienced employees as they commonly do not have the time or resources to invest in training to develop the skills of new graduates.
- Demand for school leavers is likely to decrease while demand for TAFE and university graduates is likely to increase.

The most important skills expected for school leavers are listening and speaking, reading and writing, and following instructions. Greatest weight in assessing TAFE graduates is focused on listening and speaking, teamwork, interpersonal, and reading and writing skills. For university graduates, emphasis is placed on listening and speaking, problem solving, reading and writing, teamwork and interpersonal skills.

Major strengths for each sector were identified as follows:

- school leavers bring energy, enthusiasm and willingness to learn;
 - TAFE graduates have strong technical skills and considerable knowledge of their potential work environment; and
 - university graduates have highly developed problem solving abilities.
- Major shortcomings were identified as follows:
 - school leavers are inexperienced and lack specific skills;
 - TAFE graduates need to have a stronger work ethic; and
 - university graduates have unrealistic expectations of the workplace.

The purpose of the National Survey was to gain an overall statistical analysis of employers' perceptions. This was complemented by conducting detailed case studies to capture more qualitative data about employer perceptions of graduates from the education and training sectors. The case studies are analysed in the following chapter.

Case Studies—Overview

4.1 Background

The case studies were intended to gain more detailed qualitative information to build on the findings of the National Survey of Employers and to provide a representative analysis across regions, industries and education and training sectors.

The case studies were designed to analyse employer approaches to selecting graduates, employer expectations of the knowledge and skills of new employees, and employer views on whether graduates from the education and training sectors meet their expectations. Emphasis was placed on distinguishing between social development and curriculum issues in order to identify areas which the education and training sectors can realistically address.

4.2 Methodology

Twenty-seven companies participated in case studies for this assignment. A senior human resource manager and a senior line manager were interviewed wherever possible to ensure a broad assessment of graduates from both a training and operational perspective. Case studies were selected to ensure that:

- a representative cross-section of States and metropolitan and non-metropolitan areas was included (Table 2); and
- a representative cross-section of industry sectors was included (Table 3).

Table 2: Case Studies—Locations

Capital Cities	Case Studies Conducted
Brisbane	3
Sydney	4
Melbourne	6
Adelaide	2
Non-metropolitan Areas	
Ipswich	3
Toowoomba	3
Wollongong	2
Wagga Wagga	2
Geelong	2
Total	27

Table 3: Case Studies—Industry Sectors

Industry Sector	Case Studies Conducted
<i>Mining and Energy</i>	4
<i>Manufacturing</i>	
Food	4
Other (including heavy engineering)	4
Paper	1
<i>Services</i>	
Finance, Property and Business	3
Retail	3
Professional Services	3
Construction and Transport	2
Tourism and Hospitality	2
Information Technology	1
Total	27

4.3 Approach

Employers were selected from two sources. The major source was the National Survey of Employers conducted by the Hawthorn Institute, where the survey identified companies willing to participate in a more detailed case study. Eighteen of the 27 case studies were sourced from the National Survey of Employers. To ensure adequate regional representation, regional development organisations and local Chambers of Commerce were also contacted to identify appropriate employers in non-metropolitan areas.

The case studies revealed clear differences in employer perceptions of graduates across the three sectors. These are summarised below.

4.4 Employers' Perceptions

- Employment opportunities for school leavers are likely to decrease in the future and tend to be increasingly concentrated in a narrow range of industry sectors.
- TAFE colleges need to link closely with local industry to ensure the technologies and practices they teach are compatible with the developmental needs of local industry.
- The university system needs to integrate vocational training into its curriculum to equip graduates with more realistic expectations and knowledge of the world of work.

Differences across industry sectors were also detected and are highlighted in the individual case studies. Overall, employer perceptions of the education and training sectors are the focus of this analysis and are outlined below.

The findings are analysed under a number of key areas focusing on selection of graduates, expectations about the skills of new employees and the extent to which expectations are currently being met.

4.5 Selection of Graduates

Employers conveyed a strong preference for recruiting people who have undergone a work experience rotation with the company or who have been referred to them from a trusted source. Consequently, a significant proportion of recruitment occurs on an informal basis. However, companies are more likely to have formal university graduate recruitment programs.

Unless recruiting from a highly specialised discipline at the university level, most employers indicated they do not differentiate between institutions. Commonly, institutions are targeted because of geographic location rather than a preference for particular courses or perceptions of varying standards of education.

In addition to academic results, emphasis is placed on communication skills, work experience and team skills across the school, TAFE and university sectors. These factors are considered to be more accurate indicators of a candidate's potential success in the workplace than academic results in isolation. Employers are increasingly emphasising a broad range of non-academic factors as more accurate indicators of a new employee's potential to succeed in the workplace.

Employers believe it is the role of education and training institutions to assess the academic competencies of their students. They recruit on the assumption that graduates have satisfied the academic requirements of each institution, thus allowing them to focus on the particular skills and attributes they believe are most essential for the particular work environment. Generally, employers emphasise skills and attributes which are more difficult to evaluate than academic results.

4.5.1 School

Recruitment opportunities for new school leavers are primarily restricted to service industries, such as the retail and banking sectors. Strong academic results in English and mathematics are taken as base level requirements.

Additionally employers look for the ability to:

- communicate in verbal and written form;
- exhibit team skills;
- show high levels of personal presentation;
- work quickly;
- remain calm under pressure;
- show enthusiasm and responsiveness;
- follow instructions and procedures without question; and
- give attention to detail.

4.5.2 TAFE

Demand for new TAFE graduates tends to be concentrated in the manufacturing, retail, tourism and hospitality sectors. Employers consider TAFE qualifications to be a measure of achievement of basic competencies in a particular area. Other requirements include the ability to:

- communicate in verbal and written form;
- exhibit team skills;
- be motivated to work;
- demonstrate industry-relevant work experience;
- exhibit high-level personal presentation;
- follow instructions;
- demonstrate technical skills;
- be prepared to learn and accept direction;
- be aware of technology; and
- become experienced operators, not necessarily aspiring to management positions.

4.5.3 Universities

Recruitment of university graduates is distributed across industry sectors but less concentrated in the retail, tourism and hospitality sectors. With the exception of engineering graduates and, to a lesser extent, law and commerce graduates, employers do not place strong emphasis on the level of

academic results. Achievement of a university qualification is considered an indication that graduates have reasonable intellectual ability. Greater emphasis is placed on graduates' abilities to:

- communicate verbally—experience in public speaking or debating;
- exhibit team skills;
- write effectively—provide examples of reports/thesis;
- demonstrate work experience, preferably in a relevant area;
- solve problems;
- show initiative;
- aspire to management positions;
- show strong theoretical understanding;
- exhibit strong technical skills where relevant; and
- carry out research.

4.6 Employer Expectations of New Employees

Employers indicated they prefer to train new graduates in the specific requirements of their organisation once they are employed. In many areas, employers consider demonstration of a willingness to learn more important in new employees than possession of specialist skills.

Overall, employers are more likely to attribute new employees' shortcomings to their youth and lack of life experience than to specific deficiencies in the education and training systems.

4.6.1 School

New graduates are expected to be able to communicate with customers and with staff members at all levels of the organisation. Commonly, customer service is the key role for school leavers and their ability to converse and project a friendly, efficient manner is the primary expectation. This requires the ability to speak without jargon and to be able to engage in conversation appropriate to a business environment.

School leavers are most often placed in environments where adherence to procedures for carrying out transactions is important. Consequently, graduates are expected to follow instructions and established procedures without question and to have sufficient concentration abilities to carry tasks through to completion.

They are required to work well as part of a team and be able to accept directions from more senior staff members. Personal presentation, confidence and a genuine enthusiasm for assisting people are strong expectations.

Employers expect school leavers to have a basic understanding of the particular industry in which they operate. This is vital, as school leavers are required to have some understanding and commitment to the overall purpose or objective of the organisation. Employers also consider this important to ensure school leavers have consciously given some thought to what they want to do and have some idea of their prospective work environment. If this is lacking, employers believe there is greater staff turnover and loss of investment in training.

Specialist knowledge and skills are not required at this level. Numeracy and literacy skills have become less critical in retail and tourism and hospitality sectors due to technological advancements in equipment. This has meant even greater emphasis is placed on graduates' customer service abilities, as this is a more substantial component of their role. Employers expect school leavers to be able to empathise with customers and to proactively develop solutions to their problems.

In most instances, employers prefer to hire new employees with no experience and mould them according to the particular philosophies and procedures unique to the organisation, as many employers find it more difficult to retrain practices and habits acquired during previous employment. For these reasons, lack of work experience among school leavers is considered an advantage.

4.6.2 TAFE

Differences across industries are most pronounced for TAFE graduates. New graduates from the TAFE system are expected to exhibit a high level of technical competence in their specific area of training.

Specialised skills are commonly expected by employers, and graduates are required to exhibit these almost immediately in the tourism and hospitality areas. Although training in the particular practices of each organisation occurs for all new employees, they are expected to be familiar with standard procedures and etiquette. They are also expected to be receptive to new ways of carrying out tasks and must be able to modify what they have learned in TAFE to their particular workplace requirements. Most employers expect new employees to have had industry-specific work experience.

Employers expect graduates to aspire to a standard of excellence in customer service. In the tourism and hospitality sectors, TAFE graduates are expected to have highly developed communication skills and levels of personal presentation. Highly developed team skills are also essential, as is an ability to work quickly under pressure. In addition, graduates must be prepared to be flexible and carry out instructions without question. They are expected to have strong management skills and to be highly task oriented. TAFE graduates are also expected to solve problems where necessary without being directed.

On completion of the pre-vocational course and entry into trade-specific occupations, TAFE graduates are expected to possess a detailed understanding of the trade and to be familiar with the working environment. Strong technical skills are essential and graduates need to be able to communicate with other tradespeople and senior management. Employers want new employees to exhibit a high motivation to work and a strong sense of pride in the work they produce. Team skills and reliability are also critical in this environment.

Employers do not require highly developed analytical skills or strongly developed leadership skills in new employees. TAFE graduates are expected to be able to work independently, but this is generally under close supervision. Well-developed computer skills are anticipated, particularly CAD-CAM in relevant trade areas.

4.6.3 Universities

Considerable variation exists in employer expectations of new graduates according to particular industry sectors. Specialist knowledge and skills are stronger requirements than for TAFE or school leavers. In most cases, employers take a longer term view of their investment in employing a graduate and do not expect a brilliant practitioner in the short term. However, work experience is highly regarded, particularly directly relevant work placements for considerable periods.

Graduates are expected to be strong communicators, able to relate to people at all levels of the organisation. They should have developed some conflict resolution skills and be confident in putting forward original ideas. Graduates are expected to be able to provide some input to meetings with clients and internally. They also need to know when it may not be appropriate for them to put forward their views.

Employers recruit graduates to plan for future management needs. They expect new graduates to be flexible in order to acquire a detailed understanding of their organisation by participating in a wide range of tasks,

often outside their particular area of expertise. Employers expect new graduates to apply themselves to all tasks, in order to increase their working knowledge of the organisation and to be able to apply this knowledge to profession-specific activities.

Employers expect graduates to have highly developed analytical and research skills. Graduates should have strong written communication skills that can be quickly applied to the specific report writing requirements of the organisation. Graduates need to be able to draw out key issues in a clear and concise manner and to articulate this in written form. Highly developed problem solving abilities and capabilities for independent work are also expected. Basic computer literacy and familiarity with word processing and spreadsheet packages are expected. Any specialised computer training relevant to an organisation is generally not required as in-house training is provided.

With regard to specialist skills, employers expect professionals to have gained core skills through their degrees and seek to build on these skills through in-house training and formal graduate development programs. Employers expect graduates to be able to apply the theoretical applications they have been taught to practical tasks over time. However, even in highly specialised engineering environments, employers do not generally expect graduates to be able to apply their skills immediately after recruitment.

4.7 How Well are Expectations being Met?

4.7.1 School

Enthusiasm and willingness to undertake a broad range of activities were identified as key strengths of school leavers. They commonly do not have high expectations about the nature of the work they will be required to do and are receptive to carrying out diverse activities. Generally, employers are satisfied with their numeracy and literacy skills. Computer skills tend to exceed employer expectations, and school leavers seem to adapt to new technologies and equipment with a high level of competence. Employers were also complimentary about their team skills. Employers find school leavers follow instructions well under close supervision. However, they lack initiative to follow tasks through to completion and will wait to be told to continue with a job rather than progress independently. Also, they often lack sufficient concentration abilities to carry tasks through to completion.

The major shortcoming identified for school leavers was a lack of strong communication skills. They commonly find it difficult to approach customers confidently and to engage in conversation. School leavers also find it

difficult to empathise with customers or to endeavour to find solutions to problems which arise. They often fail to exhibit the confidence or initiative to effectively address customers' problems.

An extension of this problem is a reluctance and lack of confidence to seek information outside the direct work environment. Employers have found school leavers reluctant to gather information or contact people and effectively report back to their supervisors. They seem to have difficulty in processing information given to them and relaying this back to the workplace.

Often, new employees lack an understanding of appropriate dress codes and standards of behaviour appropriate to the workforce. However, employers do not consider this a long term problem as new employees generally learn from other staff members very quickly.

Employers believe school systems do not convey the pursuit of technical trades or working in the manufacturing sector as legitimate career options. They believe schools and TAFE colleges fail to market the benefits of working in trade related areas and consequently, market perception is poor. Employers would like to see trades receive higher priority and more emphasis so that students would be encouraged to view it as a legitimate alternative to undertaking university study.

4.7.2 TAFE

Strengths of TAFE graduates were identified as the ability to follow directions and to work effectively as part of a team. Other strengths included adhering to established procedures and following detailed instructions. Technical skills are highly regarded, particularly in trade areas.

Identified shortcomings of TAFE graduates included poorly developed communication skills. This is less obvious in tourism and hospitality graduates, but a significant problem in trade areas. New employees find it difficult to communicate with supervisors and senior management and generally lack confidence in oral communication. Written communications were also identified by employers as extremely poor. This is evidenced when graduates are required to write activity reports or technical evaluations.

More generally, employers find that some TAFE graduates lack motivation or a desire to exceed basic levels of competence. They sometimes fail to focus on quality outcomes or to exhibit a desire to improve themselves. Employers believe TAFE institutions are not imparting a desire to pursue excellence in students.

Employers commonly recognised the need for closer contact with education and training institutions. There is a strong need for collaboration, particularly with TAFE, to identify recent industry innovations, processes and best practices. In manufacturing areas, stronger links need to be developed between industry and TAFE colleges to ensure more synergy between machinery and processes used by local industry and those taught by TAFE colleges. This is considered essential as employers have found TAFE colleges are teaching techniques/processes which are not appropriate to the level of development of local industry.

The level of industry experience among TAFE teachers was identified as an area of concern by employers. This exposure was viewed as essential for students to gain a realistic view of the world of work and to gain directly relevant skills.

4.7.3 Universities

Key strengths were nominated as the ability of graduates to question, to develop new concepts and to show initiative in carrying out tasks assigned to them. Employers recruit university graduates for their long term contribution to the organisation. While their theoretical skills are highly valued, they are not recruited with the expectation that they will immediately be valuable practitioners, but in the hope that their training will provide a long term contribution to the organisation.

Employers who recruit both university and TAFE graduates believe university graduates have more highly developed problem solving abilities. They demonstrate more initiative and are more capable of carrying out independent work. Employers believe their team skills are strong and many show early signs of leadership potential.

While most university graduates possess strong interpersonal skills and a degree of confidence in dealing with senior management, overall, their oral and written communication skills are not highly developed. Shortcomings are evident in their ability to effectively participate in client and internal staff meetings. With respect to written communication, employers find university graduates are not effective writers. They tend to have difficulty in logically constructing arguments and in relaying a message clearly and concisely.

A number of employers expressed the view that the increasingly competitive employment market for university graduates has produced a number of obvious differences compared with 10 years ago. On the positive side, graduates have a heightened awareness of the value of a job and, therefore, show more respect and tend to be more stable. On the negative side they are less inclined to question or be outspoken or show initiative. This competitive

market has also resulted in more graduates in the labour market seeking generalist positions outside their training, as they have been unsuccessful in gaining employment in their specialised areas.

University graduates commonly lack knowledge of the business environment such as politics, working operations of a business, and social interaction skills. The vast majority of employers interviewed expressed the view that university graduates tend to enter the workforce with unrealistic expectations about the nature of the work they should be doing and with little or no practical experience.

Graduates tend to expect to be at *the cutting edge* of their profession immediately. They commonly expect to be actively involved in glamorous and challenging work. They tend to be inflexible in gaining a broad understanding of their profession or the business in which they work. University graduates tend to have a narrow definition of the nature of the work they should be undertaking.

Employers expressed the view that many university graduates believe their learning is complete when they enter the workforce. Graduates do not realise that their learning has only commenced on entry to the workforce and that they must continue to improve themselves throughout their working lives.

Employers find there is a lack of continuity in curriculum taught at school and university with no gradual progression from one to the other. University graduates sometimes lack basic knowledge of their discipline if they have not studied relevant courses at school. It was suggested that more effective transitions should be developed or schools should include more relevant preparation in curriculum with stricter pre-requisite requirements enforced by universities.

4.8 Role of Work Experience

Work experience is highly valued as it shows initiative and is evidence that the student has had some exposure to a work organisation. The student is also more likely to have a clearer understanding of what it means to work in his/her chosen field. Employers believe students have endeavoured to give themselves a competitive advantage in the market place. However, graduates from across the three sectors are an unknown quantity. Employers are unable to use prior work experience to gain information about potential employees' skills. They view work experience as the closest substitute for this.

In the long term, employers do not necessarily believe work experience means a graduate will be a more valuable employee. However, it does suggest he/she has a clearer understanding of the workforce. A common view was expressed that TAFE and university courses should include a six month work experience rotation for students in their chosen profession.

4.9 Implications for Education and Training Institutions

The case studies raised a number of issues with key implications for the education and training sectors.

4.9.1 Career Advice

Employers believe many students graduate from education and training institutions with a lack of career direction and, in many cases, without sufficient knowledge about their employment options. Many also do not possess an accurate understanding of the nature of the work they will be undertaking in their chosen profession. Employers believe this results in a large number of graduates (particularly TAFE and university graduates) being employed in areas where they are not well suited or where their expectations are significantly different to reality.

Better career guidance is needed to equip students with more knowledge about their possible career options. Additionally, careers advisers need more business and industry-relevant knowledge in order to guide students effectively. Employers emphasised the need for career advisers to possess relevant knowledge of the current work environment and for them to liaise closely with industry.

Further, employers believe the development of effective interview skills should be provided by careers advisers. Employer experiences suggest graduates often have limited interview skills and abilities in preparing applications and resumés.

4.9.2 Business and Industry Links

Consistent with the need for more effective career advice is a strong perception that higher levels of cooperation are needed between business and industry and the education and training systems.

Most employers indicated strong support for being more closely involved in the development of TAFE and university curricula. Employers believe TAFE and university lecturers should be required to undertake regular industry placement programs so that they can provide relevant and practical information to students. Employers find that, at present, many lecturers are too far removed from the practical work environment and are not familiar with relevant practices and technology used in industry. The Teacher Return to Industry program is highly regarded by employers.

4.9.3 Customer Service

A strong emphasis on customer service skills was highlighted in the case studies. This reflects the increasing service orientation of the economy and the fact that the majority of employment opportunities for graduates are in service industries. Customer service skills are a key to survival in the current workplace and employers place considerable emphasis on developing these skills in new graduates. Employers believe this is not receiving sufficient emphasis in school, TAFE and university systems at present.

4.10 Conclusions

- The case studies revealed that employers place more emphasis on personal attributes such as oral communication, a willingness to learn, team skills and initiative than on academic results.
- Employers believe graduates need a more realistic understanding of the world of work and a willingness to apply themselves to the workplace. A common theme which arose from the case studies is that it is important for graduates to be willing to learn, to be prepared to continuously improve their skills and to be able to cope with change.
- These factors are considered to be vital in the long term, as the particular technical or academic skills they bring with them initially are only of short term value. Employers find that most specific shortcomings, in particular, skill requirements can be addressed through internal training measures and on-the-job experience. However, it is the potential of new employees to apply themselves and to be prepared to learn the specific skills required for each organisation that is considered essential and impossible to overcome through internal training.
- While employers were able to highlight significant shortcomings in the work related skills of their new recruits, there was not a strong expectation that education and training institutions should be responsible for developing all of these. However, employers suggest that education and training sectors should:
 - provide more effective career guidance;
 - facilitate access to more extensive work experience;
 - place more emphasis on the development of customer service skills;
 - emphasise the need for lifelong learning and continual updating of skills;
 - liaise more closely with business and industry;

- provide greater opportunities for lecturers to re-enter the workforce; and
 - place more emphasis on personal development of students.
- Communication skills were nominated across the three sectors as being the most common development area for new graduates. While this was a clear trend, employers have different expectations of the communication skills required from graduates in each sector. University graduates and, to a lesser extent, TAFE graduates are expected to have more highly developed abilities in conducting oral presentations and actively participating in meetings, while school leavers are primarily expected to communicate with customers and other staff members.
- Employers place strong emphasis on the broader development and life experiences of graduates. In particular, employers commonly look to activities such as participation in team sports and community activities as indicators of the ability to work in a team environment and take direction. Careers advisers need to consider the development of the whole individual and provide guidance accordingly. Additionally, education and training institutions could incorporate personal development programs into their curricula with role playing, work simulations and conflict resolution skills.
- The case studies revealed that employers have a strong commitment to training of new graduates. This training tends to be concentrated in three main areas:
 - systems and processes specific to the business;
 - upgrading of technical skills; and
 - general training courses such as communication skills (particularly focusing on presentation and effective participation in meetings), customer focus, quality management, team skills and negotiation skills.
- While in-house training was by far the most common method for provision of training, a large number of employers also indicated that they work with local TAFE colleges to provide training and also use external training providers.
- The case study findings are consistent with many of the trends identified in the National Survey of Employers, particularly employer criteria for recruiting graduates and their evaluations of strengths and shortcomings of school, TAFE and university graduates. Common trends and conclusions linking the literature review with the National Survey and the case studies are examined in Chapter 5.

Major Conclusions

5.1 Conclusions and Analysis

It is clear from both the case studies and the survey that employers have specific expectations of graduates from each of the three education and training sectors—school, TAFE and university. While employers are generally satisfied with the level of technical skills exhibited by graduates, the study revealed a number of common concerns about the personal development of graduates from all three sectors. This is also consistent with the findings from the literature review.

Employers find that graduates tend to lack well-developed:

- oral and written communication skills;
- interpersonal skills;
- team skills;
- initiative (school and TAFE graduates); and
- attitude to work.

Whether or not development of these skills/attributes is the responsibility of training and education institutions is equivocal. Many employers view the problems as due to maturity and anticipate they will improve as the graduate is moulded by the work environment. Other employers offer specific training in those areas that are considered remedial such as oral and written communication skills, team skills, negotiation skills, customer focus and quality management. Still others believe the education and training institutions place undue emphasis on disciplinary and technical training, without stressing the development of complementary skills that will assist the students to be successful in the work environment.

Certainly, most employers stressed that they consider personal attributes to be as significant a factor as academic/technical qualifications, if not more so, in the recruitment process. Although few had suggestions as to specific changes in the various curricula, a number recommended changes in the delivery of education and training programs such as to:

- facilitate access to more extensive work experience;
- place more emphasis on the development of customer service skills;
- emphasise the need for lifelong learning and continual updating of skills;
- provide more effective career guidance;

- liaise more closely with business and industry;
- provide greater opportunities for lecturers to re-enter the workforce periodically to upgrade their skills; and
- place more emphasis on personal development of students.

Two central themes seem to emerge from employer comments and concerns. These involve the need for better coordination between industry/business and the education and training sectors, and the need for more effective career guidance and planning for students.

Better coordination between the education and training institutions and business and industry would enable institutions to plan curricula which would more broadly meet the needs and expectations of employers, facilitate access to work experience for students, assist lecturers to upgrade their practical skills/knowledge, and provide students with realistic expectations about their chosen field and the working environment.

Effective career guidance and planning would allow students to assess themselves against a broad range of employer expectation; assist students to identify areas requiring further development; and guide them to ensure they develop as whole individuals, not just in a specific academic/technical area. Further, career guidance would assist them in developing realistic expectations of the working environment for new graduates and in understanding the need for continuous improvement.

The research findings are an endorsement of the attention paid by many schools, colleges and universities to providing experiences, activities and learning approaches designed to enhance generic competencies and personal qualities as opposed to sole concentration on achievements in academic subjects.

5.2 Suggested Areas for Further Research

The research findings suggest there would be benefit in exploring approaches to documenting and measuring personal qualities of graduates in a valid and reliable manner. Information about such attributes is inferred by employers from interviews, references and activities listed in the applicant's curriculum vitae, but such information is rarely systematically available in the same way that information about knowledge, skill and competencies is provided by educational institutions.

While education and training institutions often provide a range of opportunities and settings for developing such attributes, they do not have the same capacity for developing personal qualities as for other areas of the curriculum. Measurement and reporting of such qualities is by its very nature difficult and contentious.

Further research may also be warranted to explore the potential for some form of 'enterprise education' and the role which business and industry should fulfil in conjunction with education providers in its delivery. The majority of secondary schools organise work opportunities for students, and there have been several attempts to introduce the study of work in society into the curriculum. In addition, most students engage in some form of part-time work while studying. All of these factors assist in orienting students to the world of work, but they have their limitations, and none is a proper substitute for full-time engagement in the workplace.

Finally, a number of employers commented that this study should be extended to include experiences of graduates who have been in the workforce for two to three years. This would not only provide a fuller picture of the skill deficits among new graduates but would also allow comparison of their identified needs and expectations with those identified by employers. Such a study may help to clarify the roles and responsibilities among students, institutions and employers to ensure students become competent and contributing members of the workforce.

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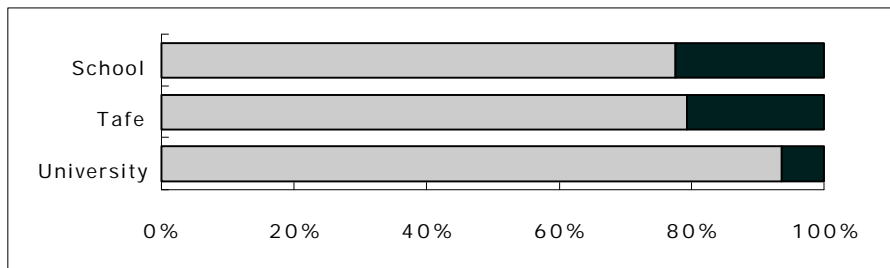
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National Survey Questionnaire Response Data

Question 1

Do you employ graduates from ... ?



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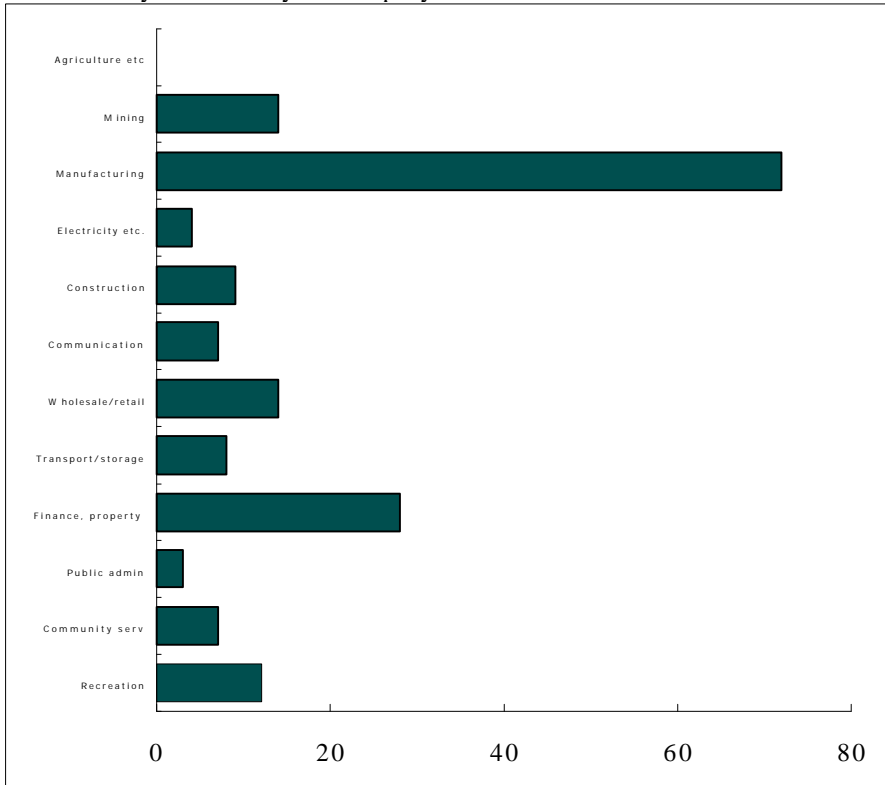


Percentages

	Yes	No
<u>School</u>	78	23
<u>Tafe</u>	79	21
<u>University</u>	94	6

Question 2

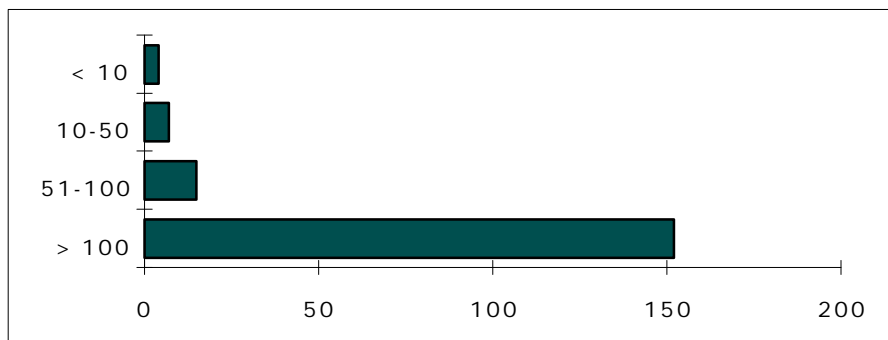
How would you describe your company's business?



	Number	Percentage
Agriculture etc	0	0
Mining	14	8
Manufacturing	72	40
Electricity etc.	4	2
Construction	9	5
Communication	7	4
Wholesale/retail	14	8
Transport/storage	8	4
Finance, property	28	16
Public admin	3	2
Community serv	7	4
Recreation	12	7

Question 3

How many persons does your company employ?

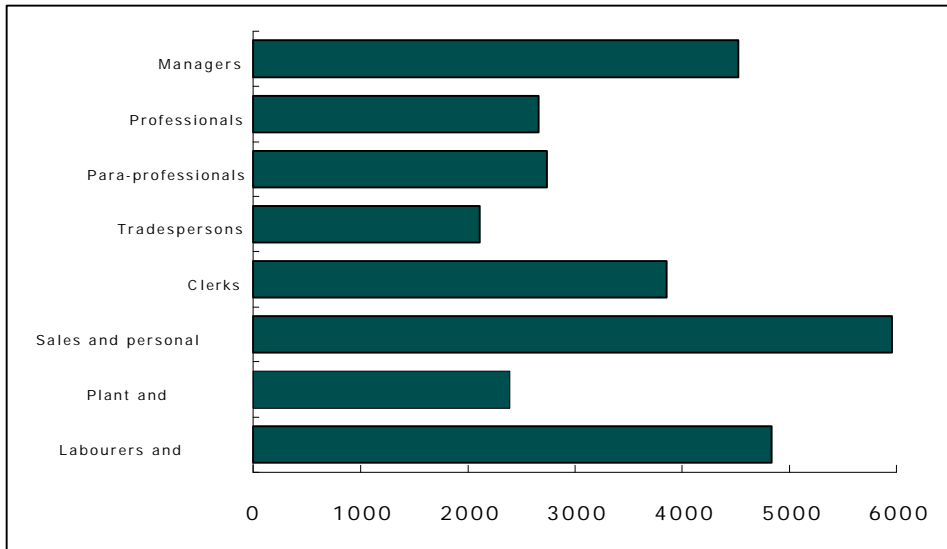


	Number of companies
< 10	4
10-50	7
51-100	15
> 100	152

Number of persons

Question 4

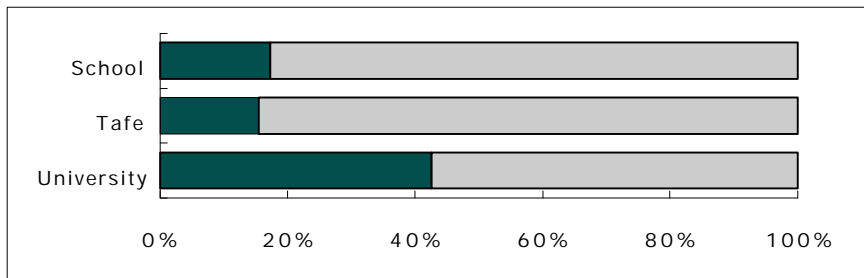
In the last twelve months, how many staff have you recruited into jobs in the following categories? (Totals for all respondents)



	Number of persons
Managers and administrators	4518
Professionals	2660
Para-professionals	2740
Tradespersons	2110
Clerks	3851
Sales and personal service workers	5957
Plant and machine operators	2393
Labourers and related workers	4833

Question 5

Do you have a formal recruitment program for graduates from ...



Legend

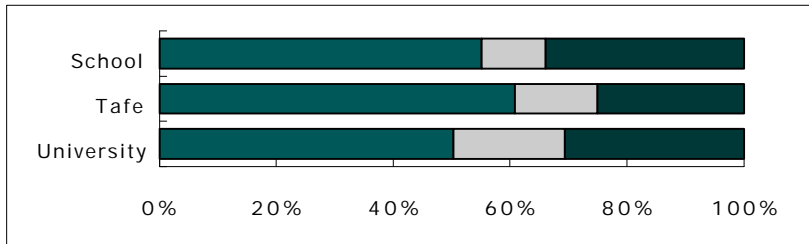


Percentages

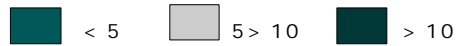
	Yes	No
<u>School</u>	17	83
<u>Tafe</u>	15	85
<u>University</u>	43	57

Question 6

How many graduates have you employed in the last twelve months?



Legend

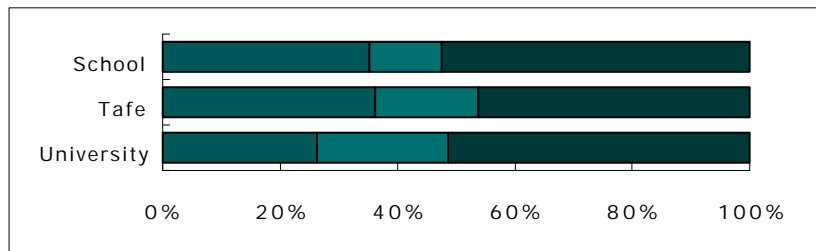


Percentages

<u>School</u>	55	11	34
<u>TAFE</u>	61	14	25
<u>University</u>	50	19	31

Question 7

How many graduates have you employed in the last three years?



Legend

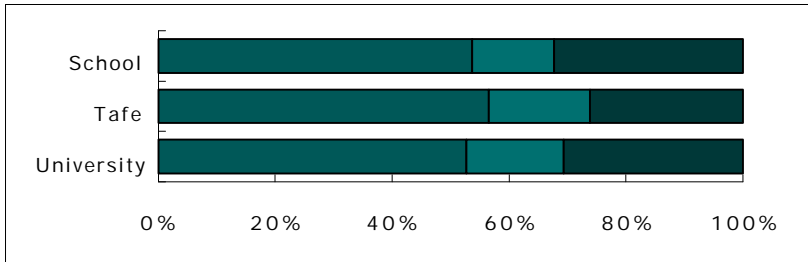


Percentages

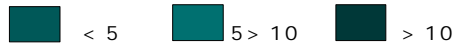
<u>School</u>	35	12	52
<u>TAFE</u>	36	18	46
<u>University</u>	26	22	51

Question 8

How many graduates do you expect to employ over the next twelve months?



Legend

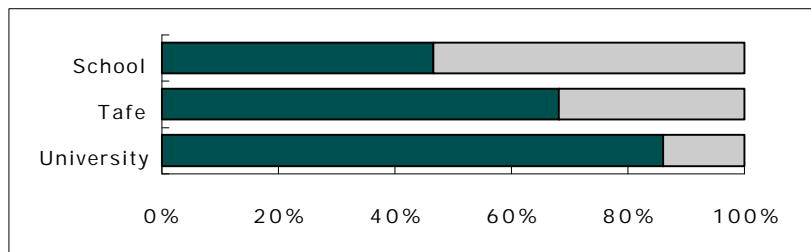


Percentages

<u>School</u>	54	14	32
<u>TAFE</u>	57	17	26
<u>University</u>	53	17	31

Question 9

Do you anticipate that over the next five years your requirements for graduates will increase or decrease?



Legend



Increase



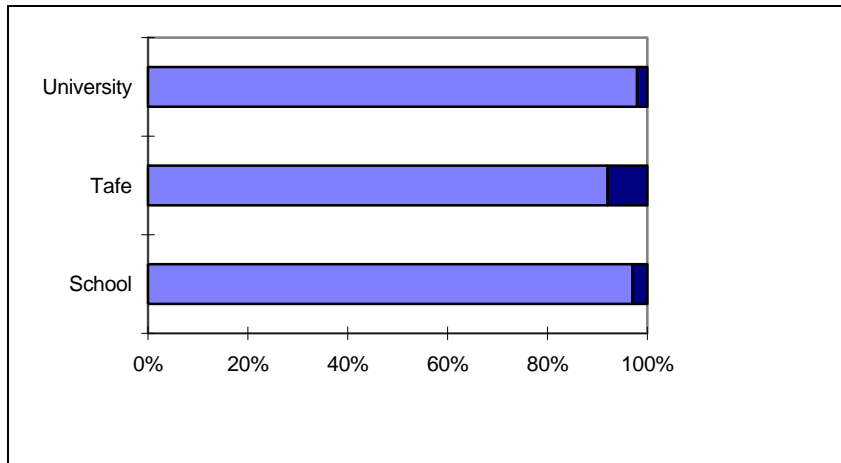
Decrease

Percentages

	Increase	Decrease
<u>School</u>	47	53
<u>Tafe</u>	68	24
<u>University</u>	86	14

Question 10

Is your demand for graduates currently being met?

**Legend**

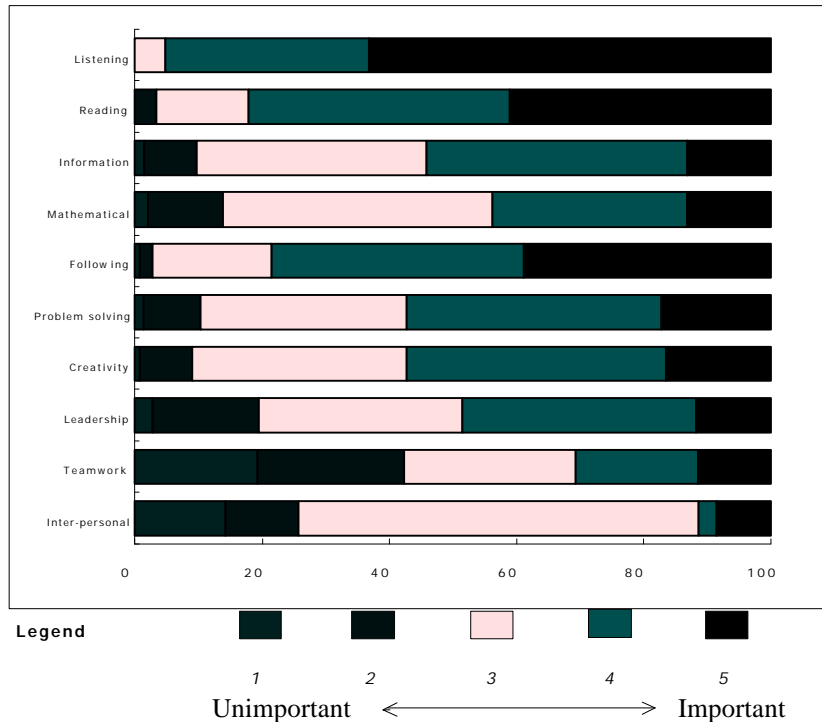
Yes



No

Question 11(a)

Which skills do you give greatest weight to in assessing applicants straight from school?

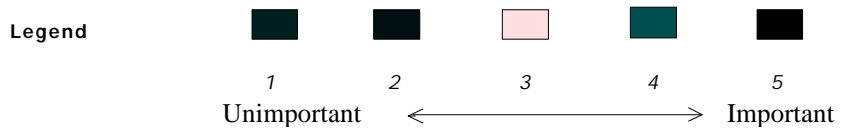
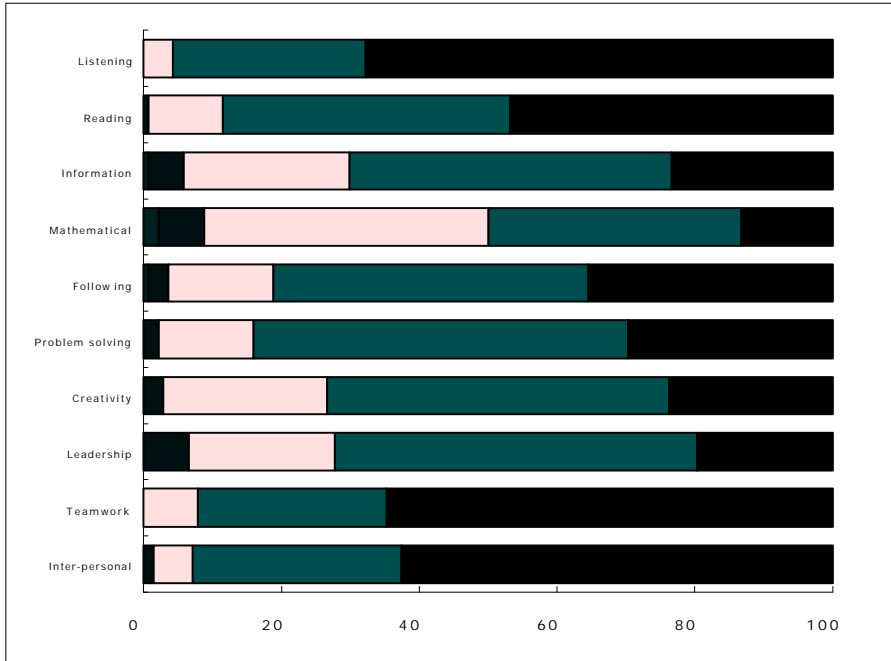


(Figures in the table below are percentages)

	1	2	3	4	5
<u>Listening and speaking</u>	0	0	5	32	63
<u>Reading and writing</u>	0	3	14	41	41
<u>Information management</u>	1	8	36	41	13
<u>Mathematical</u>	2	12	42	31	13
<u>Following Instructions</u>	1	2	19	40	39
<u>Problem solving</u>	1	9	32	40	17
<u>Creativity and initiative</u>	1	8	34	41	17
<u>Leadership & indep. work</u>	3	17	32	37	12
<u>Teamwork</u>	19	23	27	19	12
<u>Inter-personal</u>	14	11	63	3	9

Question 11(b)

Which skills do you give greatest weight to in assessing applicants straight from TAFE?

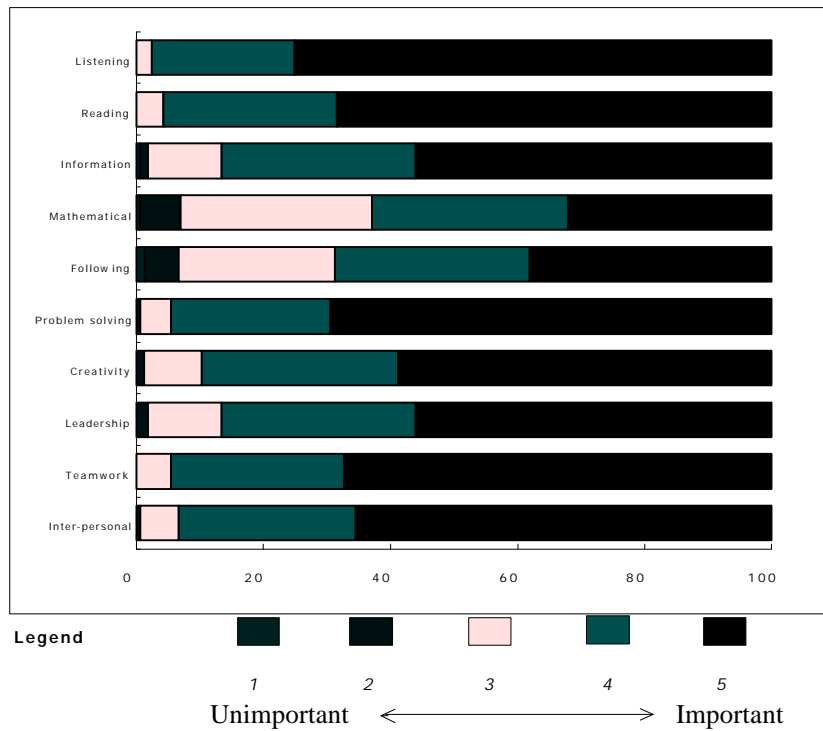


(Figures in the table below are percentages)

	1	2	3	4	5
<u>Listening and speaking</u>	0	0	4	28	68
<u>Reading and writing</u>	0	1	11	42	47
<u>Information management</u>	1	5	24	47	23
<u>Mathematical</u>	2	7	41	37	13
<u>Following Instructions</u>	1	3	15	46	36
<u>Problem solving</u>	0	2	14	54	30
<u>Creativity and initiative</u>	0	3	24	50	24
<u>Leadership & indep. work</u>	0	7	21	53	20
<u>Teamwork</u>	0	0	8	27	65
<u>Inter-personal</u>	0	1	6	30	63

Question 11(c)

Which skills do you give greatest weight to in assessing applicants straight from university?

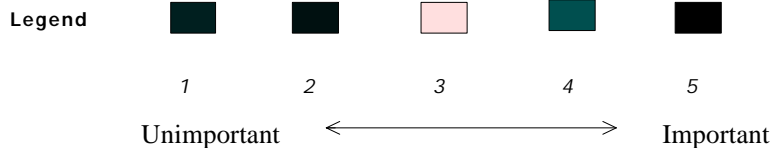
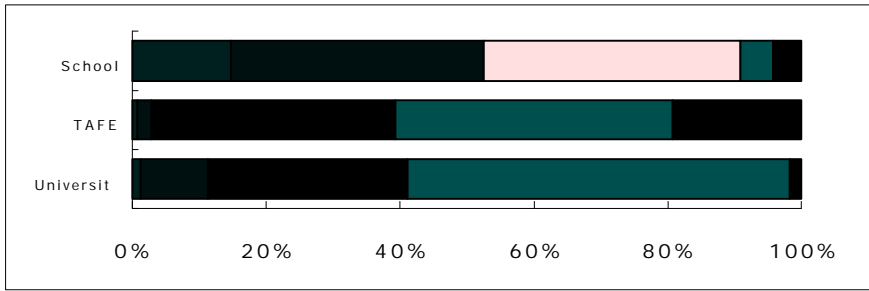


(Figures in the table below are percentages)

	1	2	3	4	5
<u>Listening and speaking</u>	0	0	2	22	75
<u>Reading and writing</u>	0	0	4	27	68
<u>Information management</u>	1	1	12	30	56
<u>Mathematical</u>	1	6	30	31	32
<u>Following Instructions</u>	1	6	25	31	38
<u>Problem solving</u>	0	1	5	25	70
<u>Creativity and initiative</u>	0	1	9	31	59
<u>Leadership & indep. work</u>	0	2	12	30	56
<u>Teamwork</u>	0	0	5	27	67
<u>Inter-personal</u>	0	1	6	28	65

Question 12

What importance do you place on specialist knowledge of graduates from ... ?

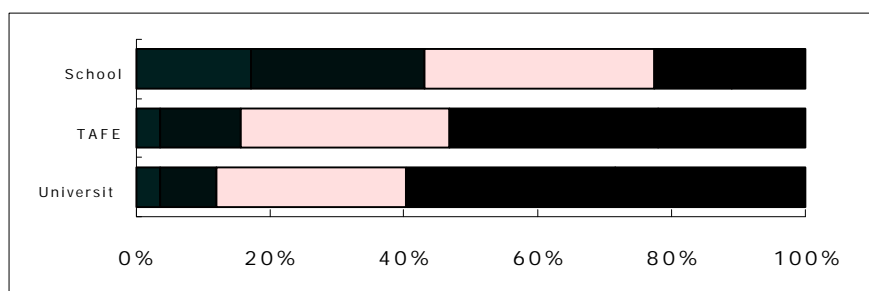


(Figures in the table below are percentages)

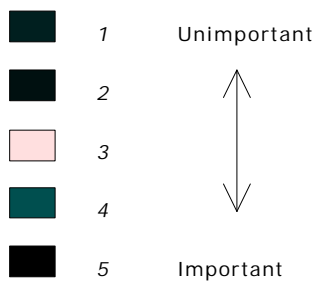
	1	2	3	4	5
<u>School</u>	15	38	38	5	4
<u>TAFE</u>	1	2	36	41	19
<u>University</u>	1	10	30	57	2

Question 13

What importance do you place on the prior work experience of the graduates you recruit from ... ?



Legend

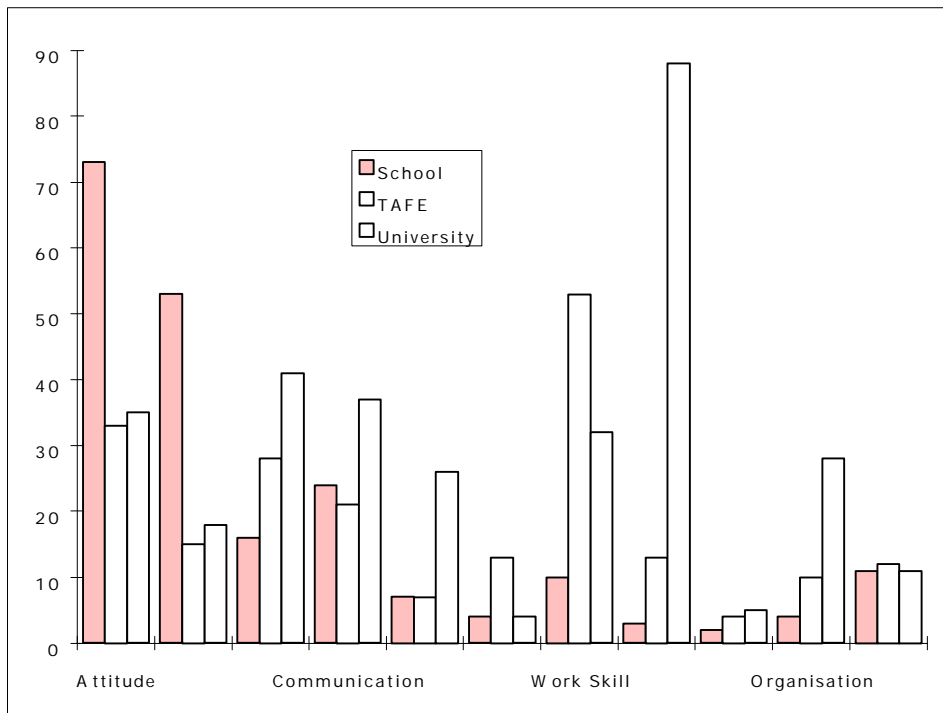


(Figures in the table below are percentages)

	1	2	3	4	5
<u>School</u>	17	26	34	12	11
<u>TAFE</u>	4	12	31	31	22
<u>University</u>	4	8	28	31	28

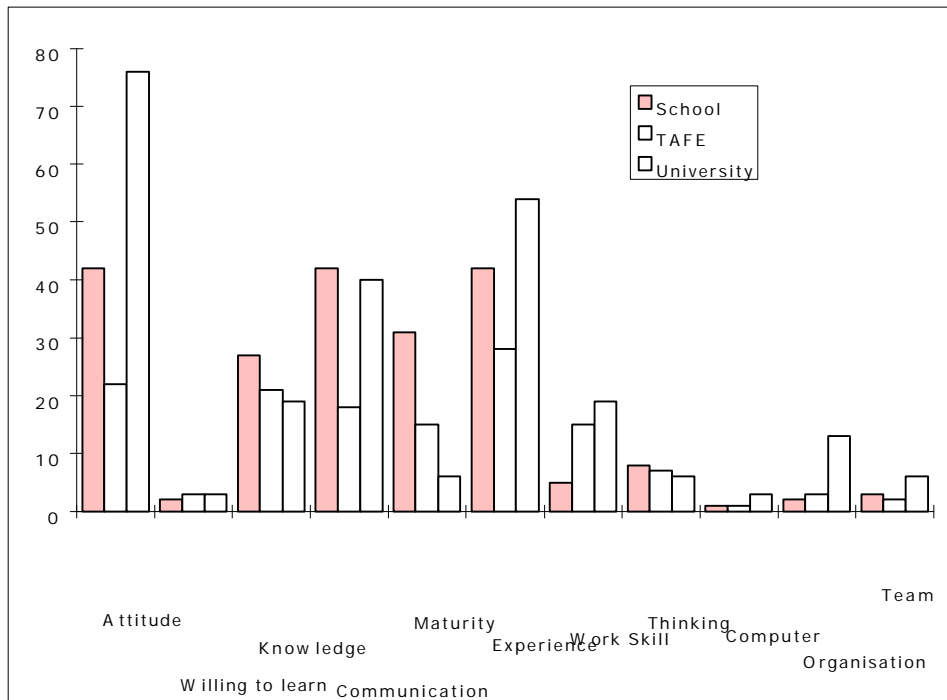
Question 14

Please identify major strengths of graduates from each of the following sectors.



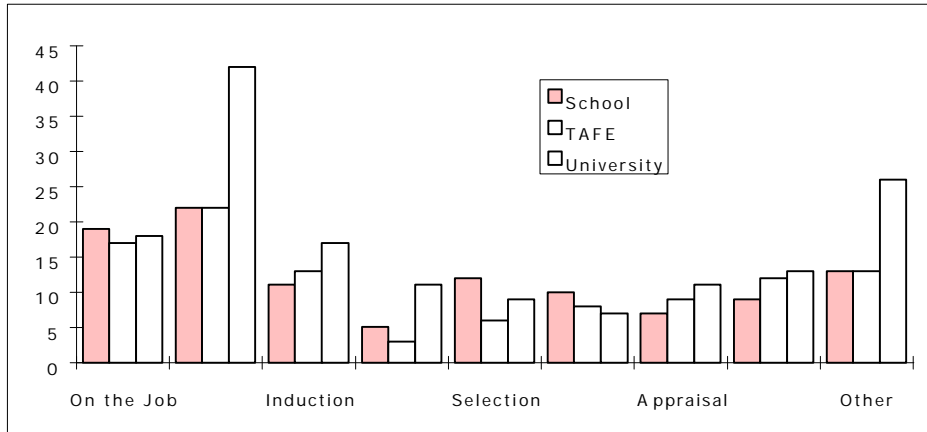
Question 15

Please identify major shortcomings of graduates from each of the following sectors.



Question 16

Formal arrangements to overcome shortcomings of recently recruited graduates.



Training

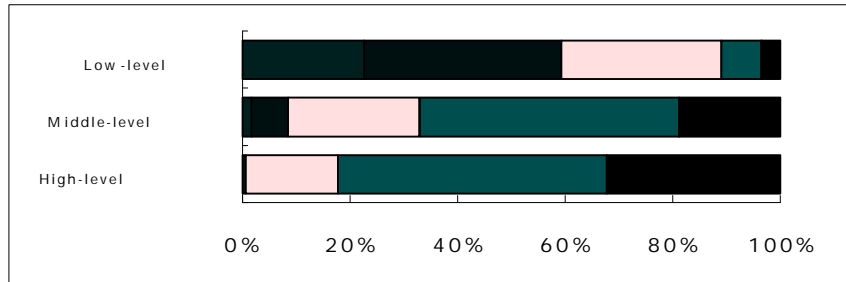
The kinds of training were difficult to classify and they may overlap in some cases.

However several trends emerge:

- * Many respondents (over 40) did not answer this question. Others gave cryptic or brief responses to one category only. Others noted that no training was given.
- * The most common form of training to overcome shortcomings was recorded as 'in house'. If 'on the job' training, coaching and 'induction' was added to that it would be by far the greatest means by which graduates are given training.
- * It appears that more specific attention is given to overcoming shortcomings of university graduates than of either school or TAFE graduates.
- * On the job training is commonly noted for all graduates, whereas coaching, appraisal, supervision and their specific programs are more often provided for university graduates than the others.
- * The most common forms of training noted were on the job, and in house.
- * School leavers were expected to undertake external courses and programs more than were either university or TAFE.
- * Many firms commented that they relied on selecting the 'right' people rather than having to train them.
- * The larger proportion of responses for TAFE may reflect the number of graduates employed rather than the relative concerns for this group. Many businesses recorded a 'nil' finding for TAFE and some noted that they had very little experience with graduates from this sector.
- * Note that coaching/monitoring, appraisal and supervision processes were used most often for university graduates. This may reflect the recorded perceptions (see Q14) that university graduates have greater maturity and more potential for management than do the others.
- * In addition to their response to this question, many noted that they provided work experience and vacation employment of students as a means of providing training and experience to overcome future shortcomings.

Question 17

In what ways do you anticipate the skillmix of your workforce will change over the next 5 to 10 years?



Legend

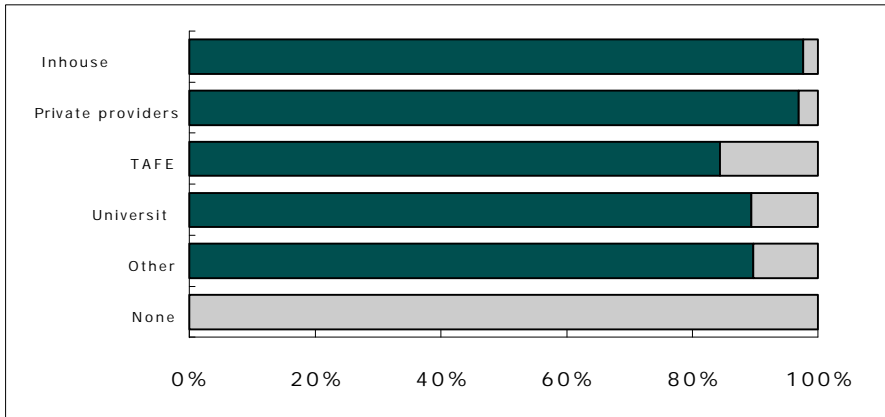
- 1 Large decrease
- 2 Small decrease
- 3 No change
- 4 Small increase
- 5 Large increase

(Figures in the table below are percentages)

	1	2	3	4	5
Low-level routine	23	37	30	8	3
Middle-level technical	2	7	24	48	19
Upper-level professional	1	0	17	50	32

Question 18

Which of the following approaches does your company use to provide training for employees?



Legend

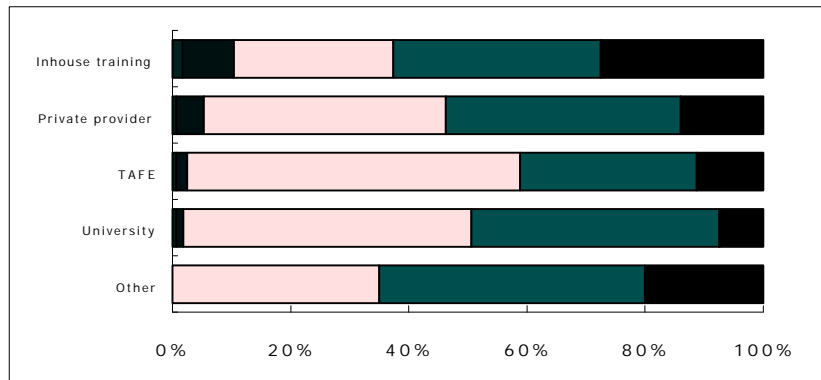


(Figures in table are percentages)

	Yes	No
<u>Inhouse training</u>	98	2
<u>Private providers</u>	97	3
<u>TAFE</u>	84	16
<u>University</u>	89	11
<u>Other</u>	90	10
<u>None</u>	0	100

Question 19

What degree of change do you anticipate in the use of these approaches in your company's training over the next five years?



Legend

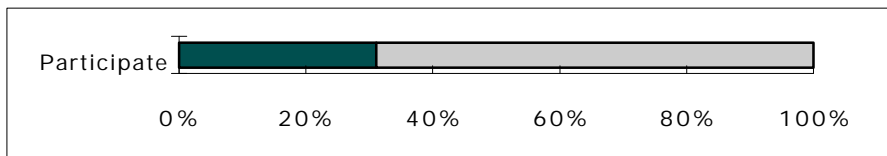
- 1 Large decrease
- 2 Small decrease
- 3 No change
- 4 Small increase
- 5 Large increase

(Figures in the table below are percentages)

	1	2	3	4	5
<u>Inhouse training</u>	2	9	27	35	28
<u>Private providers</u>	1	5	41	40	14
<u>TAFE</u>	1	2	56	30	11
<u>University</u>	1	1	49	42	8
<u>Other</u>	0	0	35	45	20

Question 20

Are you willing to participate in a follow-up interview ?

**Legend**

Yes 31%



No 69%

National Board of Employment, Education and Training

**Dimensions of Education and Training:
Australia from 1988**

Gerald Burke
Monash University-ACER
Centre for the Economics of Education and Training
Faculty of Education
Monash University

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List of Acronyms

ABS	Australian Bureau of Statistics
ABSCQ	Australian Bureau of Statistics Classification of Qualifications
ACER	Australian Council for Educational Research
ACVETS	Australian Committee on Vocational Education and Training Statistics
ANTA	Australian National Training Authority
ASF	Australian Standards Framework
AUSTUDY	Commonwealth Government scheme for financial assistance to full-time students aged 16 and over
AVETMISS	Australian Vocational Education and Training Management Information Statistical Standard
DEET	Department of Employment, Education and Training
FTE	Full Time Equivalent
GDP	Gross Domestic Product
HECS	Higher Education Contribution Scheme
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
NATMISS	National Management Information and Statistics System
NBEET	National Board of Employment, Education and Training
NCVER	National Centre for Vocational Education Research
OECD	Organisation for Economic Cooperation and Development
OTFE	Office of Training and Further Education, Victoria
TAFE	Technical and Further Education
VET	Vocational Education and Training

Executive Summary

There have been major changes in the size, structure and objectives of Australian education and training in the last few years. The prolonged problems of Australia's competitiveness in the world economy, the perceived need to contain the size of the public sector and the increasing emphasis on market or corporate forms of organisation have led to a wide range of reforms which have impacted on education and training. There has been a strong emphasis, especially from 1988, on:

- expanding the levels of education and training and the qualifications held by the workforce;
- containing the levels of *public* expenditure on education;
- reorienting education and training towards the needs of industry;
- improving the participation of less advantaged groups; and
- exposing education and training to market forces and reforming management within education.

This paper focuses on the major quantitative changes that have occurred in the period of reform from 1988. It offers information relevant mainly to the first three of the objectives listed above. Attention is given to:

- inputs of students and trainees, expenditures and staffing;
- some aspects of the process as indicated by type of institution, or type of study or training; and
- qualification levels as a measure of outputs.

There is no systematic attempt in the paper to isolate the effects of policy changes from the effects of factors such as the recession, though some comments bear on this.

There has been a major expansion in participation in postcompulsory education. The retention rate to Year 12 rose from 58 per cent to 77 per cent before slipping back to 75 per cent. The higher education sector grew much faster than expected in 1988, though much of the growth was among 20–24-year-olds, and among postgraduates rather than among school leavers. Growth in vocational education and training was, at first, relatively slow but accelerated after 1991. In part, the enrolment changes are the result of the fluctuations in the number of 15–19- and 20–24-year-olds.

There appears to have been an expansion of training of employees, though the proportion taking formal in-house training by employers declined between 1989 and 1993.

Analysis of student numbers and also of qualification levels is hampered by large differences between the administrative data sets and the Australian Bureau of Statistics (ABS) surveys. The ABS recently introduced a classification of qualifications (ABSCQ) which excludes enrolment for courses of less than one semester and qualifications arising from such courses. This has improved the detail of the ABS data but has made it difficult to make comparisons of levels of qualifications over time.

Qualification and participation targets for certain age groups were proposed in the Finn Report in 1991. For 19-year-olds, by 2001, 95 per cent (revised to 90 per cent) should have completed secondary school, be engaged in further study or have completed a qualification. For 22-year-olds, 50 per cent (revised to 60 per cent) should have completed qualifications to Australian Standards Framework (ASF) Level 3 or be engaged in study.

Analysis of 1994 data collected under ABSCQ indicates that about 78 per cent of 19-year-olds had prescribed levels. About 52 per cent of 22-year-olds held qualifications or were engaged in study. However, for 22-year-olds, about 10 percentage points of these qualifications were at basic vocational level which cannot automatically be assumed to be at ASF Level 3.

Growth in total public outlays on education was fastest in higher education, with lesser growth in TAFE and the slowest growth in schools. Growth in TAFE expenditures occurred mainly after the Finn report of 1991 and is reflected in the growth in the Commonwealth's share of TAFE funding. A large part of the growth in outlays on higher education represents Commonwealth funding of Higher Education Contribution Scheme (HECS) debt. Government recurrent expenditure on higher education, *net of HECS*, grew relatively more slowly than did its recurrent expenditure on TAFE. Up to 1992, very fast growth occurred in each educational sector in government outlays on benefits to students, mainly through AUSTUDY.

HECS represents the main move to shift financing of education out of the public sector. The charging of fees for postgraduate courses is expanding but, as yet, is not significant in the published statistics. The charging of full fees for all new overseas students from 1990 represents a major source of revenues to universities in particular. The number of overseas students grew much faster than the number of Australian students. Increased privatisation also occurred in the school sector. In the period 1988–94, non-government school enrolments grew by seven per cent, whereas government school enrolment increased by only one per cent. Overall, measured private expenditure on education across all education sectors has expanded much faster than public sector outlays.

Expenditure by employers on training appears to have expanded more rapidly than employer provision of courses. A further indicator of the size of the expenditure on training in the workplace is the large number of employees—in excess of 600 000—who consider at least part of their time to be spent on the provision of training.

The quantitative data considered in this paper offer only a brief guide on the extent to which the changes in education and training have led to closer orientation to the needs of industry. Within both the higher education and vocational education and training (VET) sectors, there was fast growth in business-related fields. In VET, there was an above average expansion of courses for operatives and basic employment and educational preparation courses and also in Associate Diploma level courses. There was stagnation in initial vocational preparation in the skilled trades areas. In senior secondary schools, there is reported to be a very rapid expansion occurring in vocational courses which are recognised for credit in post-school programs.

The data reviewed in this paper do not provide detailed information on the experience of particular groups. Some information on participation and achievement by females and males is included. Aspects of the provision of training in the workplace and the growth in labour market programs touch on the experience of particular groups.

The proportion of female students has changed little over the period from 1988. The majority of students in upper secondary schooling and higher education are female. The majority of students in TAFE are male and their proportion rose slightly over the period from 1988 to 1993. More detailed analysis by level and field of study shows a varying distribution across levels and fields (e.g. females make up 55 per cent of pass Bachelor university students but less than 40 per cent of PhD students). Among 22-year-olds, more females than males held degrees and diplomas but only 3 per cent of females held a skilled vocational qualification compared with 20 per cent of males. Some 16 per cent of females held a basic vocational qualification compared with 3 per cent of males.

Government expenditure on training in labour market programs which are aimed mainly at the long-term unemployed expanded very rapidly in 1992–93 and continued growth is still expected, though at a lesser rate than projected in *Working Nation*.

Introduction

From the late 1980s, there have been major changes in the size, structure and focus of education and training. Retention rates in upper secondary school increased sharply to 1992. Higher education was revolutionised in structure, finance and size. The reorientation of vocational education and training, summarised by the term ‘national training reform agenda’ is now well underway. These changes have occurred, in part, as a response to the prolonged problems of Australia’s competitiveness in the world economy, the perceived need to contain the size of the public sector and the increasing emphasis on market or corporate forms of organisation.

There has been a strong emphasis in policy on:

- expanding the levels of education and training and the qualifications held by the workforce;
- containing the levels of *public* expenditure on education;
- reorienting education and training towards the needs of industry;
- improving the participation of less advantaged groups; and
- exposing education and training to market forces and reforming management within education.

This paper provides an overview of the major quantitative changes from 1988 and, more particularly, on the changes relating to the first three policy objectives. It focuses on the inputs of students and resources to education and training and the outputs in terms of qualification levels. Specific consideration is given to changes in:

- population;
- student numbers and persons in training, in various types of education and training;
- public and private expenditures on education and training; and
- the level of qualifications held by the population and workforce.

The overview considers Australia as a whole from 1988, with some projections to 2001. Additional analysis is needed for the individual States and Territories as the pattern of change varies among them. The major sectors of schools, higher education and vocational education and training—including training outside of TAFE—are considered. Adult and Community Education receives only minor attention and research in universities is not explicitly discussed. Outcomes of education and training such as employment or income are not considered in this paper.

2

Population

The total resident population of Australia grew by 8 per cent from 1988 to 1994 and is projected to grow another 7 per cent by 2001. Because of the decline in births from 1971 to 1979, the pattern of growth is markedly different for some age groups. Table 1 and Chart 1 show that 15–19-year-olds declined in number by 9 per cent in the years 1988–94 but may grow by 4 per cent to 2001. The 20–24 years age group, which grew by 9 per cent from 1988 to 1994, may decline about 10 per cent in the period 1995–2001.

This means that in the mid-1990s, demographic change is tending to reduce enrolments in postcompulsory education. However, from the late 1990s, the impact of population change will be positive (e.g. the number of 17-year-olds will increase from a low 251 000 in 1997 to 265 000 in 2001). However, the effect will not be large.

The population projections in Table 1 are based on the assumption of a net migration gain of 50 000 in 1995–96, rising to 70 000 by 2000–01. This is a much lower rate of net migration than in the late 1980s. If the net migration gain grew to 100 000 per annum by 2000–01, the 15–19-year-old population would be about 9000 higher in 2001 than shown in Table 1.

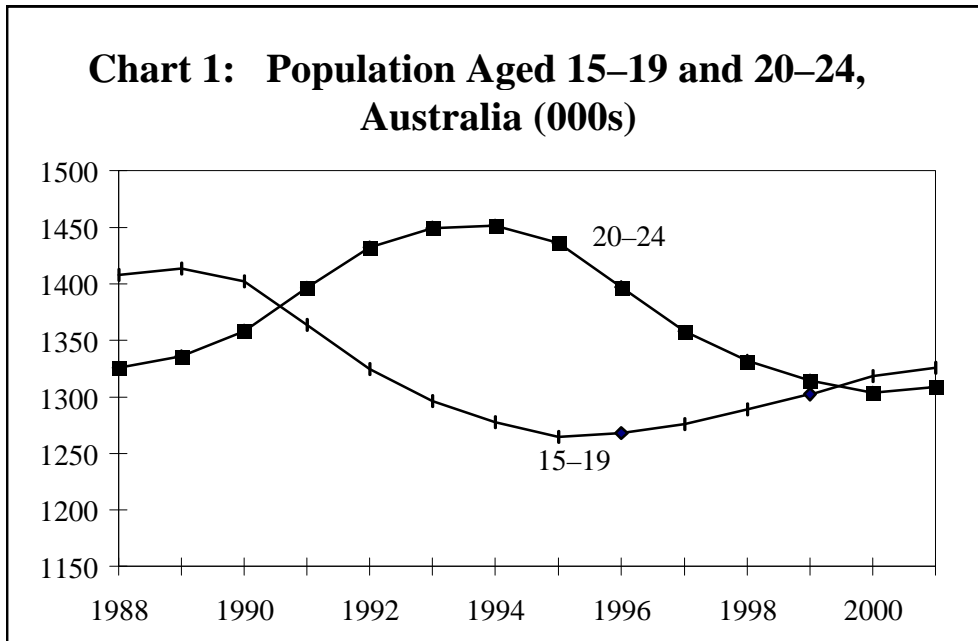
Table 1: Population by Age, Australia, 1988–2001 (000s)

	0–4	5–9	10–14	15–19	20–24	25–29	30–39	40–64	65+	Total
1988	1230	1218	1251	1408	1326	1405	2600	4304	1791	16 532
1993	1292	1277	1262	1297	1449	1363	2827	4833	2061	17 661
1994	1300	1279	1274	1278	1451	1355	2853	4941	2110	17 841
1996	1306	1293	1295	1268	1397	1408	2865	5177	2201	18 208
2001	1319	1333	1320	1326	1309	1422	2893	5888	2359	19 170
Change, 1994–2001	1%	4%	4%	4%	-10%	5%	1%	19%	12%	7%

Source: ABS, Projections of the Populations of Australia, States and Territories, 1993 to 2041, Cat. No. 3222.0.

ABS, Estimated Resident Population by Sex and Age: States and Territories of Australia, Cat. No. 3201.0.

Note: Columns and rows may not add exactly due to rounding to whole numbers.



Students and Persons in Training

There have been large changes in the size and pattern of enrolments in education and training in Australia since the late 1980s. This section provides an outline—by sector, age and by level of course and field of study—of the changes in student numbers in postcompulsory education and training. It also provides some data on the training undertaken by persons in the labour force.

Discussion of formal education focuses on schools, vocational education and training and higher education. The broader term ‘vocational education and training’ (VET) is now used rather than ‘TAFE’ to refer to the wide range of providers of vocational education and training. However, the *Selected Vocational Education and Training Statistics* (NCVER/ACVETS 1994) which are drawn on below, are for courses provided by institutions oversighted by VET authorities. The statistics do not, so far, include vocational programs supplied by private providers nor do they include programs in schools, higher education, or training provided on the job.

Changes in postcompulsory school enrolments are largely a response to student demand fostered by AUSTUDY and affected by the lack of jobs in the recession of the early 1990s. Total growth in VET and higher education in recent years has been mainly a matter of the supply of places as, especially in higher education, this has been a period of excess demand.

However, the distribution of students by age and course and field of study is, to some degree, a reflection of demand, moderated by government policy (e.g. preference for school leavers in higher education).

Table 2 details the overall growth in student numbers from 1988 to 1993, with preliminary information for 1994. For the six years to 1994, it shows that:

- total student numbers increased by about 10 per cent, reaching about 5 000 000 in 1994;
- students in compulsory schooling (to Year 10) grew by 2 per cent to 2 700 000; and
- students in postcompulsory education grew by more than 20 per cent to over 2 200 000:
 - 3 per cent in senior secondary schooling;
 - 18 per cent in VET for the years 1988–93; and
 - 40 per cent in higher education.

Table 2: Students, Australia, 1988–94 (000s)

	School to Year 10*	School Years 11 & 12*	VET*	Higher Education	'Other' #	Total
1988	2651	372	952	421	110	4505
1989	2659	372	932	441	131	4536
1990	2665	376	967	485	151	4645
1991	2677	398	986	535	134	4730
1992	2692	407	1043	559	163	4863
1993	2701	398	1121	576	122	4917
1994 preliminary	2716	384	n.a.	585	88	n.a.
Change, 1988–94	2%	3%	18%**	39%	-20%	9%**

Source: ABS, Schools Australia, Cat. No. 4221.0.

ABS, Transition from Education to Work Cat. No. 6227.0.

DEET 1995, Selected Higher Education Statistics 1994.

NCVER for ACVETS 1994, Selected Vocational Education and Training Statistics.

Notes: Columns and rows may not add exactly due to rounding to whole numbers.

* Statistics from administrative collections, not survey data.

Survey data; changes in collections affect especially 1993 and 1994.

** VET data relate to students in Streams 2100–4500 enrolled at any time in the year.

The growth in higher education was very fast from 1988 to 1991 but slowed in the years 1991–94. VET student numbers were only 4 per cent higher in 1991 than in 1988 but grew by 14 per cent in the years 1991–93, compared with 8 per cent in higher education.

The temporary decline in the population of older teenagers, shown in Table 1, explains the relatively small growth from 1988 to 1992 in the number of senior secondary students, despite a jump in Year 12 retention rates from 58 per cent in 1988 to 77 per cent in 1992. The slight decline in retention rates in the last two years (76.6 per cent in 1993 and 74.6 per cent in 1994) shows in the fall in the number of students in Years 11 and 12 from 407 000 in 1992 to 384 000 in 1994.

Projections to 2001 shown in Table 3 are based on *age participation rates remaining constant at 1994 levels*. Because of the slow projected growth in the population aged 0–40, as shown in Table 1, growth of only 4 per cent is projected in total student numbers.

Table 3: *Projected Effect of Demographic Change on Student Numbers, Australia (000s)*

	School* to Year 10	School* Years 11 & 12	VET*	Higher Education*	Other#	Total
<i>Projections assuming constant age participation or retention rates</i>						
1994	2716	384	n.a.	585	88	n.a.
1996	2772	387	1129	583	89	4960
2001	2856	417	1156	590	93	5112
Change, 1994–2001	5%	9%	3%**	1%	6%	4%**

Source: ABS, Schools Australia, Cat. No. 4221.0.

ABS, Transition from Education to Work, Cat. No. 6227.0.

DEET 1995, Selected Higher Education Statistics 1994.

DEET 1994, Projections of School Enrolments 1994 to 2003.

NCVER for ACVETS 1994, Selected Vocational Education and Training Statistics.

ABS, Projections of the Populations of Australia, States and Territories, 1993 to 2041, Cat. No. 3222.0.

Notes: Columns and rows may not add exactly due to rounding to whole numbers.

* Statistics from administrative collections, not survey data.

** VET projections based on 1993 data.

Survey data; changes in collections affect especially 1993 and 1994.

VET data relate to students in Streams 2100–4500 enrolled at any time in the year.

Projections: School projections assume constant grade progression ratios at 1993–94 level.

These imply a retention rate to Year 11 of 86 per cent and to Year 12 of 75 per cent.

VET and Higher Education projections assume constant age participation rates.

Growth at any higher rate is dependent on policies affecting demand and supply of places. Government finance and the perceptions of employers and individuals of the value of education are major factors affecting supply and demand.

Enrolments in schools up to Year 10 are projected to grow by 5 per cent in the period 1994–2001. Senior secondary enrolments, on the assumption of constant retention rate to Year 12 of 75 per cent, are projected to grow by 9 per cent in line with the regrowth of the older teenage population.

If school retention rates rose from 75 per cent to 80 per cent (the figure used in the Finn [1991] projections), enrolments in Years 11 and 12 would grow by 13 per cent from 1994 to 2001, rather than 9 per cent as shown in Table 3.

Projections which allow for increased participation in VET were prepared by the Australian National Training Authority (ANTA 1994, p. 17). The Commonwealth has promised a continued \$70 million annual increase in its funding for VET. ANTA's highest growth scenario resulted in an annual growth of 2.7 per cent per annum or of about 20 per cent for the years 1994–2001. Projections for higher education prepared for the National Board of Employment, Education and Training (NBEET 1992(b), p. 14) projected annual growth at 1.6 per cent per annum or about 17 per cent from

1991 to 2001. Growth of about 8 per cent has already occurred from 1991 to 1994. Further growth is provided for in the next triennium in public funding, partly financed by provisions for faster repayment of HECS.

The data for VET and higher education shown in Table 2 are from the administrative collections published by the National Centre for Vocational Education Research (NCVER) and the Department of Employment, Education and Training (DEET). The VET data include students enrolled at any time in the year, whereas the higher education data are for the census date of 31 March. To obtain data at the same point in time, the Finn Committee (1991) used data from the ABS May 1990 survey of *Transition from Education to Work*. At the time of the Finn Report, the ABS estimates for TAFE student numbers were only about half the level for the whole year shown in the administrative collections. One reason for the difference between the two estimates is the exclusion from the ABS collection of students not enrolled in May. Also, as Peter Stricker of the Victorian Office of Training and Further Education (OTFE) has noted, the ABS does not include students who are in Streams 2000–4500 but who are enrolled, not with TAFE, but with other VET authorities such as the Adult Community and Further Education Board in Victoria.

The introduction of the Australian Bureau of Statistics Classification of Qualifications (ABSCQ) in 1993 and changes to some questions in 1994 have widened the gap between administrative and survey estimates¹. The ABS now excludes students enrolled for courses of duration of less than one semester full-time and students not studying for a qualification.

Detailed 1994 administrative data are not yet available for VET, so Table 4 provides a comparison for 1993 of the main data sets. The table shows that:

- the estimates of school enrolments are very close in the two sets;
- the ABS estimate for TAFE is only 442 000 compared with the administrative count for VET of 1 121 000; and
- the ABS estimate for higher education is 619 000 compared with the administrative count of 576 000 students².

¹ ABSCQ provides improved estimates of qualification levels which are considered in Chapter 5.

² The 1994 ABS estimates show an increase in higher education enrolments of 56 000 whereas the preliminary administrative count increased by only 10 000, hence widening the gap between the estimates for higher education to over 100 000. Mr Terry Moran commented on this (*Australian*, 18 January 1995).

Table 4: Alternative Estimates of Student Numbers, Australia, 1993 (000s), ABS May Survey Compared with Administrative Data

	Data Source	15–19	20–24	25–64	Total
School	<i>May Survey</i>	638	8	6	651
	Administrative	636	10	n.a.	647
TAFE Full-time	<i>May Survey</i>	70	31	33	133
VET Full-time	Administrative	69	36	41	146
TAFE Part-time	<i>May Survey</i>	78	81	150	309
VET Part-time	Administrative	188	174	613	975
TAFE Total	<i>May Survey</i>	148	112	182	442
VET Total	Administrative	258	210	654	1121
Higher Ed. Full-time*	<i>May Survey</i>	129	180	77	385
	Administrative	149	131	63	344
Higher Ed. Part-time and External*	<i>May Survey</i>	6	44	184	234
	Administrative	10	58	163	232
Higher Ed. Total*	<i>May Survey</i>	135	224	261	619
	Administrative	159	189	227	576
Other Total**	<i>May Survey</i>	24	29	69	122

Source: *May Survey* = ABS, Transition from Education to Work, Australia, Cat. No. 6227.0.
Administrative = ABS, Schools Australia, Cat. No. 4221.0.;
NCVER for ACVETS 1994, Selected Vocational Education and Training Statistics; and
DEET 1995, Selected Higher Education Statistics 1994.

Notes: Columns and rows may not add exactly due to rounding to whole numbers.
 * DEET higher education statistics take date of birth at 31 December of previous year, affecting comparisons with the May survey.
 ** There is no administrative collection for 'Other'.

As discussed, part of the discrepancy between the TAFE and VET data sets can be explained by the exclusion by ABS of students enrolled for courses of less than a semester, or not studying for recognised qualifications, estimated by ABS at 340 000 for 1993. It may be assumed that the large proportion of these are in TAFE, though ABS, in 1994, did not collect data on the institution for these students. However, the ABS estimate for higher education is higher than the administrative collection, suggesting that the ABS survey may not be accurately measuring the type of post-secondary institution attended.

For these reasons, the ABS data for 1993 and 1994 are not easy to use for considering trends in student numbers over time. In any case, the ABS data, being based on a sample survey, do not contain the detail of the administrative collections. Hence, discussion here concentrates on the

administrative collections (despite any doubts as to data quality arising from the unreconciled discrepancies)³. It is clear that with the rapid changes occurring in VET, in particular, it will be a major task to monitor the system over time and to reconcile the major data sets.

Consideration is given first to schools. Table 5 shows the uneven pattern of growth and decline.

- Non-government school enrolments grew by 7 per cent in the years 1988–94.
- Government school enrolments grew by only 1 per cent.
- Government schools accommodated much of the growth in senior secondary enrolments in the years 1988–92 but experienced all the decline in 1993 and 1994.
- Junior secondary enrolments fell with the temporary decline in number of younger teenagers.

The continued swing to non-government schools means an easing of the demands on public sector expenditure, as non-government schools are only partially funded by governments. However, an offset to this saving is the increased Commonwealth Government commitment to low resource non-government schools.

Table 5: School Enrolments by Type of School, 1988–94, Australia (000s)

	Government Schools				Non-government Schools			
	Primary	Junior Secondary	Years 11–12	Total	Primary	Junior Secondary	Years 11–12	Total
1988	1291	657	250	2197	423	281	121	825
1989	1310	636	249	2194	433	281	124	837
1990	1323	622	249	2193	441	280	127	848
1991	1339	612	266	2217	448	279	132	858
1992	1352	609	273	2234	453	279	134	865
1993	1359	604	264	2228	457	280	133	870
1994	1361	603	251	2215	465	287	132	884
% change 1988–94	5%	-8%	0%	1%	10%	2%	9%	7%

Source: ABS, Schools Australia, Cat. No. 4221.0

Note: Columns and rows may not add exactly due to rounding to whole numbers.

³ The Australian Committee on Vocational Education and Training Statistics (ACVETS) has developed the Australian Vocational Education and Training Management Information Statistical Standard (AVETMISS), to be introduced from 1994, which should lead to considerable improvement in data.

VET student numbers, as shown in Table 6, grew by about 17 per cent in the years 1988–93 with growth concentrated after 1991. The table shows:

- high growth in Basic Education, Employment Skills and Educational Preparation (Stream 2000);
- high growth for courses for Operatives (Stream 3100); and
- low growth of only 5 per cent for the trades and other skills courses (Stream 3200) in line with the decline in apprentice numbers in the recession.

Technician supervisory/para professional student numbers (Streams 3300–3600) grew by 14 per cent. However, within Streams 3300–3600, growth has been very high in Stream 3500 (Para professional, Higher Technician). The average student contact hours in Stream 3500 are nearly twice the average for all streams. The result is that Streams 3300–3600 had a 44 per cent expansion of student contact hours and now account for over a third of all contact hours (see Table 7). Note, also, that the hours for Stream 3100 (Operatives) grew by 46 per cent, faster than the student numbers.

Table 8 shows that growth has been concentrated among 20–24-year-olds and among those aged 30 and over. The small growth in 15–19-year-olds represents the combination of a slight rise in age participation rate offset by a fall in the population of 8 per cent. A substantial part of the increase in numbers of students aged 20–24 years is accounted for by a population increase of 9 per cent.

Table 6: VET Students by Stream, 1988–93 (000s)

	Entry Level	Initial Vocational			Subsequent to Initial	Total Streams	Net Streams	Recreation etc.
<i>Stream</i>	<i>2000</i>	<i>3100</i>	<i>3200</i>	<i>3300–3600</i>	<i>4000</i>	<i>2100–4500</i>	<i>2100–4500</i>	<i>1000</i>
1988	247	195	280	244	118	1084	952	533
1989	258	180	263	209	102	1012	932	584
1990	206	214	271	233	114	1037	967	539
1991	245	221	275	238	120	1099	986	585
1992	273	231	278	259	130	1171	1043	701
1993	313	251	295	278	136	1273	1121	661

Source: NCVET for ACVETS 1994, Selected Vocational Education and Training Statistics.

Notes: Columns and rows may not add exactly due to rounding to whole numbers.

Stream 1000 Recreation, Leisure and Personal Enrichment

Stream 2000 Entry to Employment or Further Education

Stream 3100 Initial Vocational Courses: Operational

Stream 3100 Initial Vocational Courses: Skilled

Stream 3100 Initial Vocational Courses: Trade Technician/Trade Supervisory or equivalent

Stream 3100 Initial Vocational Courses: Paraprofessional–Technician

Stream 3100 Initial Vocational Courses: Paraprofessional–Higher Technician

Stream 3100 Initial Vocational Courses: Professional

Table 6 shows an estimated 660 000 students in 1993 in Stream 1000, Recreation, Leisure and Personal Enrichment. Stream 1000 includes courses conducted in Adult, Community and Further Education—which, as noted, also provides courses in Streams 2000–4500. The average contact hours per student is eighteen in Stream 1000, compared with an average of about 240 for students in Streams 2000–4500.

Table 7: VET Students and Annual Student Contact Hours by Stream, Australia, 1988–93

	Entry Level	Initial Vocational			Subsequent to Initial	Total
	2000	3100	3200	3300–3600	4000	2000–4500
Increase in Students, 1988–93:	27%	29%	5%	14%	15%	17%
Increase in Contact Hours, 1988–93:	21%	46%	-4%	44%	-5%	20%
1993:						
% of Students	25%	20%	23%	22%	11%	100%
% of Contact Hours	20%	12%	29%	36%	3%	100%

Source: NCVER for ACVETS 1994, Selected Vocational Education and Training Statistics.

Table 8: Net VET Students by Age, Streams 2100–4500, 1988–2001 (000s)

	19 & Under	20–24	25–29	30+	Not Stated & Bulk	Total
1988	255	166	119	341	71	952
1989	254	156	110	318	95	932
1990	275	170	115	344	63	967
1991	241	185	121	372	67	986
1992	240	198	124	393	86	1043
1993	258	210	127	435	92	1121
Change, 1988–93	1%	27%	6%	28%	30%	18%
<i>Projected effect of demographic change only (age participation rates held constant)</i>						
1996	252	202	131	452	92	1130
2001	263	189	132	480	92	1157
Change, 1993–2001	2%	-10%	4%	10%	0%	3%

Source: NCVER for ACVETS 1994, Selected Vocational Education and Training Statistics.

Note: Columns and rows may not add exactly due to rounding to whole numbers.

The projections in this table are based on 1993 data as only preliminary totals are available for 1994.

In higher education, a substantial part of the growth from 1988 is among overseas students and in postgraduate and research degree enrolments. This is shown in Table 9. Over the period 1988–94:

- undergraduate student numbers grew by 33 per cent;
- coursework postgraduate student numbers grew by 63 per cent;
- research student numbers grew by 103 per cent;
- Australian students increased by 34 per cent; and
- overseas students grew by 155 per cent.

Table 9: Higher Education Students, Australia, 1988–2001 (000s)

	Total HDR	Total PG#	Total UG#	Enabling/ Non-award	Total Students	Overseas Students	Australian Students
1988	15	53	347	6	421	18	403
1989	15	55	367	4	441	25	416
1990	17	62	401	5	485	29	456
1991	19	74	436	6	535	34	500
1992	24	79	448	7	559	39	520
1993	28	85	454	8	576	43	533
1994	31	86	460	9	585	46	539
Change, 1988–94	103%	63%	33%	40%	39%	155%	34%
<i>Projections showing effect of demographic change only (constant 1994 age participation rates)</i>							
1996	32	87	456	9	583	46	537
2001	33	90	458	9	589	46	543
Change, 1994–2001	6%	5%	0%	3%	1%	0%	1%

Source: DEET 1995, Selected Higher Education Statistics 1994.

Notes: Columns and rows may not add exactly due to rounding to whole numbers.

Includes the transfer of Basic Nursing from hospitals to higher education.

Projection assumes constant 1994 age participation rates.

Projection assumes constant number of overseas students.

HDR = higher degree research.

PG = coursework masters and other postgraduate.

UG = undergraduate courses; 1994 includes Bachelor degrees with graduate level entry.

For 1994, 5265 postgraduate bachelor students are included in the undergraduate total.

Table 10 shows that the growth in student numbers in higher education is greatest in the 20–24 year age group. This is partly due to the increase in population of this age group but it also represents a substantial rise in age participation rate (from 9 per cent to 13 per cent). It shows up in the expansion in honours, postgraduate and research degrees. The participation rate for 15–19-year-olds increased but by less than that for the 20–24 year group, reflecting the difficulty for school leavers in obtaining places in the early 1990s.

Projections in Table 9, based on the 1994 age distribution by course level, show very little growth in the system and very little change in the spread of students across undergraduate, postgraduate and research degrees. As mentioned, policy issues relating to the finance of places, rather than demography, will be the major factor in the size and shape of higher education in 2001.

Table 11 shows that the proportion of female students has changed little over the period from 1988. The majority of students in upper secondary schooling and higher education are female. The majority of students in VET Streams 2000–4500 are male. Table 11 gives the average shares for the sectors and this tells only part of the story. More detailed analysis by level and field of study shows a varying distribution across levels and fields (e.g. females make up 55 per cent of pass Bachelor university students but less than 40 per cent of PhD students).

Table 10: Higher Education Students by Age, Australia, 1988–94 (000s)

	15–19	20–24	25+	Total
1988	134	120	167	421
1989	148	127	166	441
1990	162	141	182	485
1991	171	160	203	535
1992	165	177	217	559
1993	159	189	227	576
1994	162	191	232	585
Increase, 1988–94	21%	60%	39%	39%

Source: DEET 1995, Selected Higher Education Statistics 1994.

Note: Columns and rows may not add exactly due to rounding to whole numbers. Includes the transfer of Basic Nursing from hospitals to higher education.

Table 11: Students in Postcompulsory Education by Sex, Australia, 1988 and 1993 (000s and percentage)

	Schools Years 11 & 12		VET Streams 2000–4500		Higher Education		Total	
	Males	Females	Males	Females	Males	Females	Males	Females
1988	179	192	504	448	206	215	888	856
	48%	52%	53%	47%	49%	51%	51%	49%
1993	194	203	597	506	268	308	1060	1017
	49%	51%	54%	46%	47%	53%	51%	49%

Source: ABS, Schools Australia, Cat. No. 4221.0.

ABS, Transition from Education to Work, Cat. No. 6227.0.

DEET 1995, Selected Higher Education Statistics 1994.

NCVER for ACVETS 1994, Selected Vocational Education and Training Statistics.

Note: Columns and rows may not add exactly due to rounding to whole numbers.

There have been changes in the distribution of students by field of study in recent years. TAFE adopted a new classification of field of study in 1990, so only recent changes are clear. The largest field of study is 'Business, Administration, Economics' which has shown above average growth and now accounts for over a quarter of all TAFE students in Streams 2000–4500. Engineering and Building fields have stagnated, not surprising given the recession and the fall in apprenticeships. The statistics for Land and Marine Resources and Animal Husbandry have shown a remarkable rise in recent years and this warrants further investigation.

In higher education, the fastest growth from 1988 to 1994 was in Law and Health—the latter can be explained by the transfer of Nursing to higher education. Business (which now rivals Arts as the largest field of study), Science and Engineering all had above average growth rates. Arts had a below average growth. Education's absolute numbers were slightly lower in 1994 than in 1988, representing a major fall in its share of the growing total number of students.

It is not easy to say whether the changes in field of study also mean there has been a trend towards more vocational education. In senior secondary schools there has been an increase in courses which receive recognition towards vocational qualifications. But, as yet, there are no generally available statistics.

Schools, VET (as measured in the earlier tables) and higher education cover only part of the training provided in Australia. An indication of the wider scope of education and training is given in the ABS survey of training and education experience in 1993. A summary of some of the main findings of the 1993 survey and of a 1989 survey are given in Table 12.

Table 12: Wage and Salary Earners: Training in Australia, 1989 and 1993

	Study or Training Courses Undertaken								On-the-job		Some Training Undertaken		No Training Undertaken		Total Wage & Salary Earners	
	Studied		In-house		External		*Total									
	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993
Total Number (000s)	1124	1316	2338	2214	658	836	3205	3324	4814	5792	5300	6072	1405	1007	6705	7079
	<i>Per cent of wage and salary earners:</i>															
All Persons	17	19	35	31	10	12	48	47	72	82	79	86	21	14	100	100
With Post-school Qualifications	17	20	44	41	15	17	56	56	76	86	84	90	16	10	100	100
Without Qualifications	16	17	27	23	5	7	40	39	68	78	75	82	26	18	100	100
Males	17	18	35	31	10	12	49	46	71	81	79	85	21	15	100	100
Females	17	19	35	32	9	12	47	48	73	82	79	86	21	14	100	100
Born not in Main English-speaking Countries	14	14	25	23	7	8	37	35	63	75	70	78	30	22	100	100
Aged 15–19	54	57	23	14	6	6	65	63	91	92	96	96	4	4	100	100
Aged 20–24	29	35	34	27	8	9	54	54	86	90	91	94	9	6	100	100

Source: ABS, Training and Education Experience, Cat. No. 6278.0.

Note: *Persons can undertake more than one form of training.

About 2 200 000 wage and salary earners in 1993 undertook in-house training courses and around 840 000 undertook external training courses. About 1 300 000 are shown to have undertaken studies (and should be included in the earlier tables on VET and higher education). In summary:

- 48 per cent undertook some formal study or training in the twelve months prior to the 1989 survey and about the same percentage in 1993;
- a much larger number undertook on-the-job training with the percentage increasing from 72 per cent in the 1989 survey to 82 per cent in 1993;
- the proportion studying (at, say, TAFE or universities) increased slightly between 1989 and 1993 to 19 per cent of wage and salary earners;
- the proportion taking externally-funded training grew from 10 per cent to 12 per cent; and
- there was a decline in the proportion taking in-house courses of training—from 35 per cent in 1989 to 31 per cent in 1993.

More persons with post-school qualifications undertook formal education and training than those without qualifications, the gap being most marked in relation to external training courses. A smaller proportion of wage and salary earners born in non-English speaking countries than those born in English speaking countries received training⁴.

The gap between the proportion of female and males receiving some training is small, with females slightly ahead. However, females tended to receive shorter courses than males—a smaller proportion of females than males received in-house or external courses lasting 40 hours or more. Proportionately more young workers undertake study and formal training and more receive on-the-job training. A noticeable increase from 1989 to 1993 is in the proportion of 20–24-year-olds undertaking study—in keeping with the increased enrolment of students aged 20–24 in higher education and TAFE discussed above⁵.

The ABS survey in 1993 provided some information on the training and education experience of employers, self-employed, unemployed and persons marginally attached to the labour force.

- About 36 per cent of the unemployed reported undertaking study or training courses, compared with 47 per cent of wage and salary earners.
- The access of the unemployed to informal on-the-job training was much smaller than for wage and salary earners.

⁴ See also the Office of Training and Further Education (1994).

⁵ The ABS survey of training and education experience is being studied in detail by Phillip McKenzie of the Monash-Australian Council for Educational Research (ACER) Centre for the Economics of Education and Training and Michael Long of ACER.

- The proportion of employers and self-employed studying or undertaking training courses was much lower than for wage and salary earners, though their level of on-the-job training appeared to be quite high.
- ‘Marginally attached’ persons (those who would like a job but are not classified as unemployed) have a low level of formal training and a low level of informal training.

It can be expected that the proportion of the unemployed undertaking training will have expanded in 1994 and 1995 in the wake of *Working Nation* (Keating 1994) which increased the range of programs for the unemployed, led to the introduction of the training wage, more active promotion of the programs and extended case management of the unemployed. The Department of Employment, Education and Training recorded 508 000 commencements to its employment access programs in 1993–94, over 300 000 from among those unemployed for twelve months or more (DEET 1994, p. 135). If the economy continues to grow rapidly, we could expect a contraction in the number of long-term unemployed and in the numbers on training programs.

Expenditure and Staffing

This section provides an overview of expenditure on education and training from 1988. Again, it is clear that there are shortcomings in the data available on both total expenditure and especially on expenditure per student or trainee in different settings. A more direct indicator of the effort expended on education and training is the number of staff employed. Some indicative data on staffing are provided.

Table 13 presents ABS data on State and Commonwealth government outlays at current prices on the main education sectors⁶. Growth over the period from 1987–88 to 1993–94, adjusted for the general level of price increases (not education cost levels), is shown in the last line of the table. This data indicates that:

- outlay on universities and university students grew by about 44 per cent over the six years;
- TAFE outlays grew by 31 per cent; and
- school outlays grew by 15 per cent.

The difference between total government outlay and government consumption expenditure (recurrent expenditure) is particularly marked in the case of universities. Real total outlays on universities are shown to grow by 44 per cent over the period 1987–88 but recurrent outlays by only 23 per cent. This is because students on HECS are now treated by ABS as paying a fee. The net increase in HECS debt financed by the government each year is included in the column headed ‘Other’ and hence included in the total outlay. The outlay shown in the ‘Other’ column for universities fell in 1992–93 as a result of repayment of the HECS loans.

⁶ Outlays can be decomposed into real and price changes though there is a dearth of estimates of cost level in schools and TAFE for the last few years.

Table 13: GDP and Government Outlays on Schools, TAFE and Universities (\$000m)

	Schools					TAFE					Universities					Total Gov't Education Outlays	GDP	Gov't Outlays % of GDP
	Cons.	Capital	Benefits	Other	Total	Cons.	Capital	Benefits*	Other	Total	Cons.	Capital	Benefits*	Other	Total			
1987-88	6.12	0.45	0.39	1.48	8.44	1.19	0.25	0.08	0.01	1.52	2.36	0.28	0.37	-0.01	3.00	14.4	298	4.8%
1988-89	6.75	0.52	0.46	1.58	9.31	1.29	0.25	0.08	0.02	1.64	2.32	0.28	0.44	0.18	3.22	15.8	335	4.7%
1989-90	7.01	0.62	0.51	1.81	9.96	1.45	0.32	0.09	0.02	1.93	2.46	0.30	0.49	0.40	3.64	17.2	367	4.7%
1990-91	7.67	0.64	0.55	1.92	10.78	1.54	0.33	0.09	0.03	1.98	2.75	0.34	0.63	0.54	4.26	18.9	377	5.0%
1991-92	8.19	0.59	0.64	2.16	11.59	1.69	0.28	0.10	0.05	2.11	2.99	0.33	0.79	0.70	4.81	20.4	390	5.2%
1992-93	8.33	0.58	0.68	2.30	11.87	1.80	0.34	0.11	0.05	2.30	3.23	0.43	0.87	0.61	5.14	21.5	405	5.3%
1993-94	8.37	0.55	0.70	2.44	12.05	1.95	0.25	0.24	0.04	2.48	3.61	0.36	0.74	0.64	5.35	22.0	429	5.1%
Increase																		
Nominal	37%	21%	82%	65%	43%	64%	-1%	195%	514%	63%	53%	26%	100%	n.a.	78%	52%	44%	6%
Real	10%	-2%	47%	33%	15%	33%	-20%	138%	396%	31%	23%	2%	61%	n.a.	44%	23%	16%	

Source: ABS, Expenditure on Education, Australia, Cat. No. 5510.0, and unpublished data supplied by ABS.

Notes: Total equals all outlay by governments on the sector.

Cons. = final expenditure by governments for recurrent purposes such as the payment of teachers' salaries.

Capital = the purchase of new fixed assets plus net expenditure on second-hand fixed assets.

* Benefits are mainly financial assistance to students such as AUSTUDY; there appears to be a reclassification from universities to TAFE in 1993-94.

(a) Total government education outlays include pre-school, transport and some other expenditures.

Real increase is the increase in constant prices (with the nominal expenditures deflated by the deflator for the GDP).

'Other' includes grants to non-government schools and net advances to students under the HECS scheme.

The outlays on student benefits (especially AUSTUDY) increased very rapidly in the late 1980s and 1990s. The expansion of benefits for school students was very rapid in the years of rising school retention rates. Growth in benefits for TAFE students has been fastest overall.

Table 14 shows the Commonwealth and State shares of the public funding for the major education sectors. The most notable feature has been the strong growth in the Commonwealth's share in outlays related to schools (including benefits to school students) and to TAFE. The Commonwealth share of total public outlays has risen from 41 per cent in 1987–88 to 45 per cent in 1993–94.

Table 14: Commonwealth and States, Public Outlays on Education by Sector

	1987–88 \$Billion	% Share	1993–94 \$Billion	% Share
<i>Schools</i>				
Commonwealth	2.24	27%	3.63	30%
States	6.20	73%	8.42	70%
Total	8.44	100%	12.06	100%
<i>Transport</i>				
Commonwealth	0.01	2%	0.00	0%
States etc.	0.44	98%	0.69	100%
Total	0.44	100%	0.69	100%
<i>TAFE</i>				
Commonwealth	0.43	28%	0.88	35%
States etc.	1.09	72%	1.61	65%
Total	1.52	100%	2.48	100%
<i>Higher Education</i>				
Commonwealth	2.96	99%	4.98	94%
States etc.	0.04	1%	0.37	6%
Total	3.00	100%	5.35	100%
<i>Pre-school etc.</i>				
Commonwealth	0.09	12%	0.15	14%
States etc.	0.67	88%	0.88	86%
Total	0.76	100%	1.02	100%
<i>Total Government*</i>				
Commonwealth	5.85	41%	9.88	45%
States etc.	8.57	59%	12.10	55%
Total	14.43	100%	21.98	100%

Source: ABS, Expenditure on Education, Australia, Cat. No. 5510.0, and unpublished tables.

Notes: Outlay includes student benefits, grants to non-government institutions, net increase in HECS debt, recurrent and capital expenditures

Pre-school etc includes some adult education not elsewhere classified by ABS

* Total includes outlays on tertiary not elsewhere classified and other outlays not elsewhere classified. ACT outlays were included in Commonwealth data until 1 July 1989.

Table 15 shows recently revised data on private expenditures not financed by government grants and by 'loans' through HECS. Private expenditure is shown to have grown much faster than government outlay (shown in Table 13). Private outlays rose from 0.47 per cent of GDP to 0.63 per cent.

For about six years prior to 1990, wage increases of teachers and lecturers lagged behind the general level of prices. In the early 1990s, some of the lost ground in salaries was recovered just as the GDP flagged. This contributed to a rise in government outlays on education as a share of the GDP from 4.7 per cent in 1989–90 to 5.3 per cent in 1992–93 (shown in Table 13 in the far right column). If the cost levels in education had moved in line with the general level of prices, the share of GDP would have increased only to about 5.0 per cent, as shown in Table 16. The recent rapid growth in GDP (the denominator for estimating the share of GDP) has resulted in the fall in public outlay on education as a share of GDP in 1993–94, as shown in Table 13.

Table 15: GDP and Private Final Expenditures on Education not Financed by Government (\$000m)

	Consumption	Gross Fixed Capital	Total	GDP	% GDP
1987–88	1.16	0.25	1.40	298	0.47%
1988–89	1.33	0.21	1.54	335	0.46%
1989–90	1.60	0.25	1.85	367	0.51%
1990–91	1.94	0.26	2.20	377	0.58%
1991–92	2.18	0.23	2.41	390	0.62%
1992–93	2.38	0.26	2.64	405	0.65%
1993–94	2.39	0.31	2.70	426	0.63%
% Increase from 1987–88 to 1993–94	107%	26%	93%	43%	35%

Source: ABS, Expenditure on Education, Australia, Cat No. 5510.0, and unpublished data.

Table 16: *Effect of Relative Costs on Public Outlay on Education as Share of GDP*

	Government Education Outlays \$Billion	GDP \$Billion	Outlays % of GDP	GDP Deflator/ Education Deflator Index 1989-90 = 100.0	Outlays % of GDP at Constant Relative Prices
1987-88	14.4	298	4.8%	94.1	4.6%
1988-89	15.8	335	4.7%	98.0	4.6%
1989-90	17.2	367	4.7%	100.0	4.7%
1990-91	18.9	377	5.0%	98.8	4.9%
1991-92	20.4	390	5.2%	93.8	4.9%
1992-93	21.5	405	5.3%	93.4	5.0%

Source: ABS, Expenditure on Education, Australia, *Cat. No. 5510.0*.
 ABS, Australian National Accounts, National Income and Expenditure, *Cat. No. 5204.0*
 DEET 1993, Higher Education Funding for the 1994-96 Triennium.

Note: *Reliable indexes of education costs are only available for the higher education sector. The cost adjustment index of the higher education sector is used here as the education deflator.*

The ABS expenditure data involve a common approach to all the education sectors. As with student data, they lack the detail of the administrative collections. In particular, they offer very little information about the private sources of revenue.

The Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) each year compiles finance statistics on a consistent basis across States on government expenditure on government schools. The Department of Employment, Education and Training compiles data on non-government schools. These data can be used to analyse trends in funding per student and differences among states (MCEETYA 1994). Analyses of these (Burke 1995) showed that expenditure per student in real terms in government schools had continued to grow on average in the late 1980s and early 1990s. Appendix Table A1 shows that nominal outlays on government schools increased by about 40 per cent in the six years from 1987-88 to 1993-94, a little more than the 35 per cent estimated by ABS (Table 13, columns 1 and 2). A 'real' increase in resources per student of 10 per cent is shown in Table A1 but this 'real' increase includes teacher redundancy payments. Nor is adjustment made for any changes in mix of students across levels of schooling, though this effect would not be large for these years. The estimates of 'real' changes suffer from the lack of an adequate measure of price changes in schools. The Department has abandoned the calculation of the Schools Price Index which was used for many years to adjust Commonwealth grants to schools for changes in school cost levels.

Data have been compiled for ACVETS (1994) on the revenue of Vocational Education and Training institutions. In 1993, about 86 per cent (89 per cent in 1989-90) of the total revenue of public VET institutions was received

from government and the remaining 14 per cent from fees, charges and other sources. Details on the sources of VET revenues from 1989–90 are given in Appendix Table A2. The major change in funding is the increase in the Commonwealth's share from 20 per cent in 1990–91 to 26 per cent by 1993. Fee-for-service, a substantial proportion funded by Commonwealth labour market programs, has risen from 3 per cent to 7 per cent of revenues. Student fees have remained at 3 per cent of revenues. The VET data on expenditure and students and price changes are not yet adequate to estimate trends in real funds per student.

The increase in the numbers of senior secondary school students taking vocational courses means that some part of the outlays on schooling could be treated as VET expenditure in any comprehensive analysis of expenditure. This could be a substantial sum since expenditure on the 400 000 full-time students in senior secondary schooling would approximate total government expenditure on VET as currently recorded.

Some details on DEET data on higher education income are given in Appendix Table A3. In 1993, of a total universities revenue of nearly \$6.5 billion, only 56 per cent was received under Commonwealth grants. This compares with 66 per cent in 1989. Some 13 per cent came through HECS but this is still largely financed by Commonwealth 'loans'. Fees and charges yielded 12 per cent in 1993 compared with 6 per cent in 1989. The main source of relevance is fees from overseas students. Fees from Australian students remain a small share of revenue but the freeing up of charges for postgraduate coursework degrees and the likely constraint on funded places may see this change.

Analysis of the DEET data by the Australian Vice-Chancellors' Committee shows that the constant price operating outlay per student unit in higher education fell by about 9 per cent in the years 1988–91, continuing a decline that started in the late 1970s. Real funds per student rose a little in 1992, 1993 and 1994 (particularly as universities reduced the unfunded load that occurred through 'over-enrolment' in 1991). A decomposition of the operating funds allocated for Australian students is given in Appendix Table A4. It shows that over the period 1988–93, real operating outlay rose 23 per cent (partly funded by HECS). Student load increased by 32 per cent. There was, therefore, a decline of 6 per cent in operating grant per student. In the case of universities, the calculation of 'real' outlays involves the use of specific price deflators maintained by DEET.

Employer expenditure on training was surveyed by ABS in 1989, 1990 and 1993, followed by a survey of employer training practices in 1994. A summary of some major findings from the 1993 survey is given in Table 17. Total expenditure for the July–September quarter in 1993 exceeded \$1 billion or 2.9 per cent of gross wages and salaries, compared with 2.6 per cent in 1990. The employer expenditure equals about 1 per cent of the GDP. Of this

expenditure on training, nearly half (46 per cent) represents expenditure on the wages and salaries of those undertaking training and just over half on the cost of trainers and other expenditure. Employer expenditure on trainers and other training expenditure (excluding wages and salaries of the trainees) is of roughly the same magnitude as government expenditure on VET.

The employer expenditures in Table 17 represent \$192 per employee for the three months from July to September 1993 or over \$750 *per year* per employee. Expenditure per-employee-who-received-training is much higher. The ABS expenditure survey did not provide an estimate of the numbers being trained but Table 12 showed that about 31 per cent of wage and salary earners had received in-house training. In-house training absorbed nearly 70 per cent of all training expenditure in 1993, so a rough estimate of expenditure per employee receiving in-house training would be \$1500.

About 60 per cent of employees are shown in Table 17 as employed in firms with 100 or more employees. For the private sector, only about 45 per cent of employees are with employers with more than 100 employees. Small and medium-sized businesses include many employers and all the self-employed who are not included in Table 17.

These aggregate estimates of employer expenditure at best provide an indication of the dimension of training. They are useful in indicating the level and broad types of training undertaken by firms of different size in various industries. Even in this regard, they provide only partial estimates for the whole labour force as, for example, they do not include expenditure on the self-employed.

A very important source of learning is explicitly not considered in the Training Expenditure Survey:

Informal training is excluded from the scope of this survey. That is, any unstructured on-the-job training, being shown how to do things as the need arises, learning by doing a job. (ABS Cat. No. 6353.0, p. 34)

Table 12 showed that 82 per cent of wage and salary earners had received on-the-job training. The fact that we can measure expenditure on education and on structured training should not lead to the neglect of the importance of on-the-job training and the means of fostering it.

Table 17: Employer Expenditure on Formal Training[#] Australia, July–September 1993

	Number of Employees			Total
	1–19	20–99	100 or more	
Total Expenditure \$m	112	178	819	1109
% of Gross Wages	1.7%	2.7%	3.2%	2.9%
In-house	0.9%	1.5%	2.4%	2.0%
External	0.8%	1.2%	0.8%	0.9%
% of Employers Reporting Expenditure	18%	80%	98%	25%
Expenditure per Employee \$	86	180	236	192
Private	85	180	208	163
Public	*	178	267	263
Number of Employees—million	1.31	0.99	3.47	5.77
Private	1.29	0.93	1.85	4.13
Public	0.01	0.06	1.62	1.64
Hours per Employee	4.1	5.3	6.2	5.6
<i>For Employers Reporting Expenditure</i>				
Hours per Employee	13	6	6	7

Source ABS, Employer Training Expenditure, Australia, Cat. No. 6353.0.

Note: [#] Formal Training: All Training activities which have a structured plan and format designed to develop employment-related skills and competencies are defined as formal training. It consists of periods of instruction, or a combination of instruction and monitored work. The instruction can take the form of workshops, lectures, tutorials, training seminars, audio-visual presentations, demonstration sessions or self-paced training packages. Informal training (i.e. unstructured on-the-job training, being shown how to do things, learning by doing the job), is excluded from the scope of this survey.

* Sampling variability too high for practical purposes.

Government expenditure on labour market programs approximates about 0.5 per cent of GDP (DEET 1994). Table 18 uses the classification developed by NBEET (1994) to separate those programs largely directed to training. The estimated expenditure on training in labour market programs in 1993–94 was

nearly \$1.2 billion, equal to over half the total expenditure on labour market programs. Table 18 shows that expenditure on such programs more than doubled in the two years after 1990–91.

One indicator of the effort in providing education and training is the number of staff in the various sectors. Table 19 shows that 200 000 teachers (FTE) are employed in schools. About 20 000 full-time teachers (and large numbers of part-time teachers) are employed by VET authorities and over 30 000 are employed in universities.

These numbers of teachers in formal education can be viewed in relation to the recent estimates by ABS of the number of persons in other sectors who are engaged in the provision of training. As shown in Table 20, about 600 000 employees report spending part of their time in providing training, with 28 000 spending most of their time on training (see also Allen Consulting 1994). These data need closer analysis but they do indicate the great numbers involved, to some extent, in training.

Table 18: Labour Market Programs Involving Training

Expenditure \$m Current Prices	1987–88	1988–89	1989–90	1990–91	1991–92	1992–93	1993–94
Integrated Training (a)	148	188	166	147	209	522	543
Off-the-job Training (b)	84	124	149	211	308	525	497
Labour Adjustment Assistance (c)	13	16	12	11	29	57	71
Aboriginal Employment and Training (d)	72	83	79	85	96	39	44
Total	318	410	406	454	642	1143	1155

Source: NBEET 1994, Making The Future Work.

Commonwealth of Australia 1995, Budget Paper No. 1, 1995–96.

Notes: (a) Integrated training refers to combined on- and off-the-job training. It includes apprenticeship and traineeship support, JOBSKILLS and LEAP.

(b) Off-the-job training includes JOBTRAIN, 75 per cent of Skillshare from 1988–89, Special Intervention Program and Accredited Training for Youth.

(c) Includes programs to assist those displaced by tariff cuts.

(d) Community employment–development was included in Aboriginal employment and training until 1991–92.

Table 19: *Approximate Teaching and Academic Staff, Australia 1988–94 (000s)*

	School Teachers		VET Authorities	University Academics
	<i>Persons</i>	<i>FTE</i>	<i>Full-time Teachers</i>	<i>Persons</i>
1988	212	200	18	27
1989	211	199	18	27
1990	213	199	18	28
1991	213	200	18	30
1992	217	202	18	31
1993	218	202	20	32
1994	218	200	n.a.	32

Source: ABS, Schools Australia, *Cat. No. 4221.0*.

DEET 1995, Selected Higher Education Statistics 1994.

ACVETS for NCVER 1994, Selected Vocational Education and Training Statistics.

Notes: School teacher numbers exclude casual replacement teachers. FTE is Full Time Equivalent.

Table 20: *Training or Teaching Staff outside Formal Education, Australia, 1993 (000s)*

	Adult or Community Education	Commercial Training Business	Non-profit Training Organisation	Supplier or Equipment Manufacturer	Other(a)	Total
Employees Involved in Conducting Training	7.3	17.4	23.6	40.6	512.4	601.3
<i>Proportion of Time Spent</i>						
Up to 25%	*3.8	14.4	20.0	31.8	455.8	525.8
26–75%	*2.5	*0.8	*2.6	*7.8	45.2	58.9
76–100%	*1.0	*2.2	*0.9	*1.1	11.3	16.5

Source: ABS, Training and Education Experience, *Cat. No. 6278.0*.

Notes: * These estimates have relative standard errors in excess of 25 per cent.

(a) Includes persons employed in Industry Skills Centres and at Business Colleges.

This table only includes employees and not employers or self-employed.

Qualifications and Targets

There has been a rapid growth in the qualification level of the labour force as shown in Table 21. As discussed, the ABS recently applied a new set of definitions. These provide data which are more meaningful, but not comparable with earlier years, because of their exclusion of enrolments in courses lasting less than one semester and of qualifications obtained from such courses. An idea of the effect of the changed definitions can be gained from the data for February 1993 on the old definitions, and February 1994 on the new definitions, as shown in Table 21. The numbers with degrees and trade qualifications are little changed but there is a large reduction in the sum of the other categories. The total with qualifications is shown to decline from 51 per cent to 47 per cent.

Targets for attainment or participation have been set in recent years for particular age groups. In 1991, the Finn Committee set a *completion/participation* target for 19-year-olds:

...by the year 2001, 95 per cent of 19-year-olds should have completed Year 12, or an initial post-school qualification or be participating in formally recognised education or training.

Table 21: *Labour Force with Post-school Qualifications 1988–94 (000s)*

	1988	1989	1990	1991	1992	1993	1994	% 1994
Labour Force	7793	8067	8306	8453	8557	8575	8669	100%
With Post-school Qualifications	3531	369	3937	4022	4175	4333	4073	47%
Degree	762	803	872	919	1010	1058	1001	12%
Postgraduate Diploma	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	181	2%
Undergraduate Diploma	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	295	3%
Associate Diploma	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	590	7%
Certificate or Diploma	1458	1575	1613	1735	1772	1815	n.a.	
Skilled Vocational	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1420	16%
Trade Qualifications	1289	1295	1302	1330	1359	1405	n.a.	
Basic Vocational	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	587	7%
Other	23	20	50	37	33	56	n.a.	

Source: ABS, Labour Force Status and Educational Attainment, Australia, Cat. No. 6235.0.

Note: February 1994 data exclude certificate qualifications attained on completion of a course of study of the equivalent of less than one semester's full-time duration.

The Carmichael Report in 1992 suggested 90 per cent as the target, revised down from the 95 per cent suggested by Finn (1991).

The estimated figure in 1990 was 73 per cent. There was rapid growth from 1990 to 1992 to about 78 per cent but little change since, though the revisions to the ABS collection could have affected the 1993 and 1994 estimates. The effect on 19-year-olds of the change in definition does not appear to be large. The ABS survey appears to measure full-time student numbers fairly accurately. As shown in Table 22, the main elements of the participation and attainment of 19-year-olds in 1994 were:

- 50 per cent attending educational institutions (29 per cent at higher education and 17 per cent at TAFE);
- 18 per cent with the highest level of schooling but not attending; and
- 10 per cent with qualifications and not attending.

Table 22: *Persons Aged 19, Qualification and Educational Attendance, May 1994 (000s)*

	With Qualifications	Without Qualifications					Total	Total Persons	
		Highest Level of School	Less than Highest Level of School	Never at School	Still at School	% of population			
Attending School	0	0	0	0	10.1	10.1	10.1	4%	
Attending Higher Education Full-time	2.4	68.7	0	0	0	68.7	71.1	27%	
Attending Higher Education Part-time	0.0	3.7	0.3	0	0	4.0	4.0	2%	
Attending TAFE Full-time	2.2	11.6	1.6	0	0	13.3	15.4	6%	
Attending TAFE Part-time	4.5	18.0	7.1	0	0	25.1	29.6	11%	
Attending other Educational Institutions	0.3	1.5	0.7	0	0	2.2	2.5	1%	
Total Attending	9.4	103.5	9.8	0	10.1	123.4	132.8	50%	
Attending as % of Population Aged 19	4%	39%	4%	0%	4%	47%	50%		
Total not Attending	25.3	48.1	57.8	0.2	0.0	106.1	131.3	50%	
Not Attending as % of Population Aged 19	10%	18%	22%	0%	0%	40%	50%		
All Persons	34.6	151.6	67.6	0.2	10.1	229.5	264.1	100%	

Source: Unpublished data from ABS Labour Force Survey.

Note: Estimates of less than 5000 have a standard error in excess of 25 per cent of their value.

The slight decline in school retention rates to Year 12 in 1993 and 1994 could affect the rate of progress to the target. However, the main elements of the attendance or achievement by 19-year-olds are attendance at TAFE and university. As there has been excess demand for places, the proportion of an age cohort entering higher education can continue to rise despite a slight fall in school retention rates. Similarly, the continued expansion of VET can accommodate a rising proportion of school leavers.

For 22-year-olds, a target of 50 per cent (revised to 60 per cent after an Australian Education Council meeting) should have completed qualifications to ASF Level 3 or be proceeding to a higher qualification (Finn 1991; NBEET 1992(a)).

The effect for 22-year-olds of the application of the new ABS classifications is marked. There was an estimated drop in the percentage with qualifications from over 44 per cent in the May 1992 survey to 39 per cent in May 1993. There were some changes in the ABS questions in 1994 that further affect comparability over time.

As shown in Table 23, about 39 per cent of 22-year-olds in 1994 had attained a post-school qualification and a further 14 per cent who were without qualifications were attending post-school courses. This provides a total of 52 per cent to compare with the target of 60 per cent.

It is arguable that the 1994 level is well below 52 per cent. About 10 per cent of persons aged 22 hold basic vocational qualifications some of which could be considered as below ASF Level 3. If all of these were excluded, the current figure would be only about 44 per cent.

Table 23 shows only about 4 per cent of 22-year-olds held an Associate Diploma. In *Raising the Standard* (NBEET 1993), it was estimated that about 12 per cent of 22-year-olds held qualifications roughly considered at ASF Levels 4–6. It is not easy to infer such a figure from Table 23. The rapid increase in student numbers in TAFE courses in Stream 3500 noted earlier would suggest an increase could be expected in the numbers with Associate Diplomas.

The expansion of recognition of training in industry should also increase the numbers holding recognised qualifications but the earliest effect may be on basic vocational qualifications.

There are limited administrative data to compare with the ABS estimates of qualifications. The 1994 edition of *Selected VET Statistics* will provide estimates of VET graduates. (In addition, ACVETS has instigated an annual follow-up of destinations of vocational education graduates [e.g. Dawe 1993; ABS 1994]). DEET compiles estimates of higher education graduates. The number of Bachelor degrees and other undergraduate awards in higher

education has increased from 52 000 in 1987 to 98 000 in 1993 (of which 90 000 are degrees). The 1993 figure is well above that projected for 1994 in the Dawkins White Paper of 1988. Table 23 shows about 41 000 22-year-olds hold degrees or undergraduate diplomas and another 41 000 are pursuing further study, many of them for a degree. The two sets of estimates do not appear to be wildly out of kilter, when allowance is made for the fact that a proportion of university awards are for second degrees.

The matter of second qualifications is in need of further investigation. Tables 23 and 24 give some detailed information on 22-year-olds in 1994. They show that 25 000 of those who had obtained qualifications were undertaking further study. The majority were undertaking higher education courses but a considerable number were taking TAFE courses, including some university graduates. It can also be noted that nearly 90 per cent of the study being undertaken by 22-year-olds is at Associate Diploma or higher levels.

Table 25 provides the estimates for 22-year-olds by sex. More females than males hold degrees and diplomas reflecting their higher rate of entry to universities. The pattern is dramatically different for skilled vocational and basic vocational qualifications where:

- 20 per cent of 22-year-old males hold skilled vocational qualifications compared with 3 per cent of females; and
- 16 per cent of 22-year-old females hold basic vocational qualifications compared with 3 per cent of males.

The differences reflect the long-term predominance of males in apprenticeships and the entry of females into clerical and related courses.

Table 23: Persons Aged 22, Qualification by Attendance, May 1994, Australia (000s)

	Attending Educational Institution									Not Attending	All persons	%
	School	Higher Education Full-time	Higher Education Part-time	TAFE Full-time	TAFE Part-time	Business College	Industry Skills Centre	Other Education	Total Attending			
With Post-school Qualifications	0	12	5	1	5	0	0	2	25	89	114	39%
Degree and Postgrad.	0	8	3	0	0	0	0	2	13	21	34	12%
UG Diploma	0	0	1	0	0	0	0	0	2	5	7	2%
Assoc. Diploma	0	3	0	0	1	0	0	0	4	7	11	4%
Skilled Vocational	0	0	0	0	2	0	0	0	2	31	34	11%
Basic Vocational	0	1	1	1	1	0	0	0	4	24	28	9%
Without Post-school Qualifications	1	21	7	4	8	0	0	1	41	139	181	61%
Highest Secondary	0	21	7	3	4	0	0	1	37	57	94	32%
Less than Highest Secondary	0	0	0	1	3	0	0	0	4	81	86	29%
Still at School	1	0	0	0	0	0	0	0	0	0	1	0%
All Persons	1	33	12	5	12	0	0	4	66	227	295	100%

Source: ABS, unpublished data from Transition from Education to Work survey.

Note: Columns and rows may not add exactly due to rounding to whole numbers.

Table 24: Persons Aged 22, Qualification by Course Attendance, May 1994, Australia (000s)

	Total	Doctorate or Masters	Postgraduate diplomas	Bachelor	Undergraduate Diploma	Associate Diploma	Skilled Vocational	Basic Vocational	Not Attending	All Persons	% Persons
With Post-school Qualifications	25	2	5	9	1	6	1	0	89	114	39%
Degree & Postgraduate	13	2	4	5	0	2	0	0	21	34	12%
Undergraduate Diploma	2	0	0	1	0	0	0	0	5	7	2%
Associate Diploma	4	0	0	3	0	1	0	0	7	11	4%
Skilled Vocational	2	0	0	0	0	2	0	0	31	34	11%
Basic Vocational	4	0	0	1	0	1	1	0	24	28	9%
Without Post-school Qualifications	41	0	0	26	1	7	5	2	139	181	61%
Highest Secondary	37	0	0	26	1	6	4	0	57	94	32%
Less than Highest Secondary	4	0	0	0	0	1	1	2	81	86	29%
Never Attended School	0	0	0	0	0	0	0	0	0	0	0%
Still at School	0	0	0	0	0	0	0	0	0	1	0%
All Persons	66	3	5	34	2	13	6	2	227	295	100%

Source: ABS, unpublished data from Transition from Education to Work survey.

Note: Columns and rows may not add exactly due to rounding to whole numbers.

Table 25: Persons Aged 22 by Sex, Qualification by Attendance, May 1994 (000s)

	With Post-school Qualifications						Without Post-school Qualifications					Total	%
	Total	Degree & PG	UG	Associate Diploma	Skilled Vocational	Basic Vocational	Total	Highest School	Less than Highest	Never Attended	Still at School		
Females													
Total Attending	13	6	1	3	0	2	22	19	3	0	0	36	24%
Not Attending	45	13	4	3	4	21	66	28	37	0	1	111	76%
All Females	58	19	5	6	4	24	87	47	40	0	1	146	100%
	40%	13%	3%	4%	3%	16%	60%	32%	27%	0%	1%	100%	
Males													
Total Attending	12	7	1	1	2	1	19	18	1	0	0	32	21%
Not Attending	43	9	1	4	27	3	73	29	44	0	0	117	79%
All Males	56	15	2	6	29	4	92	46	46	0	0	148	100%
	38%	10%	1%	4%	20%	3%	62%	31%	31%	0%	0%	100%	

Source: ABS, Transition from Education to Work, special data request.

Note: Columns and rows may not add exactly due to rounding to whole numbers.

6

Conclusion

There have been major changes in the size, structure and objectives of Australian education and training. Policies developed as a response to the perceived problems of the Australian economy emphasised the need to improve competitiveness in the world economy, the need to contain the size of the public sector (though Australia ranks very low among OECD countries in public outlays) and the need to use market or corporate forms of organisation to promote efficiency. In education and training, policies were directed at:

- expanding the levels of education and training and the qualifications held by the workforce;
- containing the levels of *public* expenditure on education;
- improving the participation of less advantaged groups;
- reorienting education and training towards the needs of industry; and
- exposing education and training to market forces and reforming management within education.

This paper focused on the quantitative changes that have occurred in this period of major reform. The data considered relate mainly to the expansion of education and training and to containing the level of public expenditure.

There has been a major expansion in participation in postcompulsory education. In senior secondary school, the retention rate to Year 12 rose from 58 per cent to 77 per cent before slipping back to 75 per cent. The number of higher education students and graduates increased much faster than projected in the Dawkins White Paper of 1988, though much of the growth was among 20–24-year-olds and among postgraduates rather than among school leavers. Growth in vocational education and training was, at first, relatively slow but accelerated after 1991. There appears to have been an expansion of training among employees, though the proportion of employees who were provided with formal in-house training by employers declined between 1989 and 1993.

In part, the changes in numbers since 1988 in postcompulsory education were a function of changes in the number of 15–19- and 20–24-year-olds. The period to 2001 will see these demographic changes reversed, with an expansion in the number of 15–19-year-olds and a decline in the number of 20–24-year-olds. However, the effect of this demographic change on the pattern of enrolments across the sectors is not expected to be large.

Analysis of student numbers and also of qualification levels is hampered by large differences between the administrative data sets and the ABS surveys. The ABS recently introduced the ABSCQ classification of qualifications which excludes enrolment for courses of less than one semester and qualifications arising from such courses. This has improved the detail of the ABS data but has made it difficult to make comparisons of levels of qualifications over time. For example, the percentage of the labour force estimated to hold some form of post-school qualification was nearly 51 per cent in 1993 but, under ABSCQ, in 1994 was estimated at 47 per cent.

There is particular interest in the educational participation or qualification levels of 19- and 22-year-olds. Targets for these age groups were proposed in the Finn Report in 1991 and some alternatives have been proposed since then. For 19-year-olds by 2001, 95 per cent (revised to 90 per cent in NBEET 1992(a)) should have completed secondary school, be engaged in further study or have completed a qualification. For 22-year-olds, 50 per cent (revised to 60 per cent after an Australian Education Council meeting) should have completed qualifications to ASF Level 3 or be engaged in study.

Analysis of 1994 data collected under ABSCQ indicates that about 78 per cent of 19-year-olds had the prescribed levels. About 52 per cent of 22-year-olds held qualifications or were engaged in study. However, about 10 percentage points of these qualifications were at basic vocational level which cannot automatically be assumed to be at ASF Level 3.

Public outlays on education and training fell slightly as a share of the GDP in the late 1980s, rose sharply to 5.3 per cent in 1992–93 but fell to 5.1 per cent in 1993–94. The changes are due, not only to changes in real outlays, but also to changes in the GDP and to changes in relative prices. Teachers' and lecturers' salaries (the main components of educational costs) had lagged behind the general level of prices in the late 1980s but caught up some lost ground in the early 1990s. The GDP had stagnated in the recession of the early 1990s but grew rapidly in 1993–94. Hence, the recent fluctuations in the share of GDP, in themselves, offer very little insight into the long-term trends in the burden of public outlays. Analysis of these issues is hampered by a lack of good price indexes for costs in schools and vocational education and training.

Growth in total public outlays was fastest in higher education, with lesser growth in TAFE and the slowest growth in schools. Up to 1992, very fast growth occurred in each sector in benefits to students. Growth in operating expenditures in higher education was most notable up to 1992 and, in TAFE, mainly after the Finn Report of 1991. A large part of the growth in government outlays on higher education represents Commonwealth funding of HECS debt. Government recurrent expenditure on higher education, *net of HECS*, grew relatively more slowly than recurrent expenditure on TAFE. The projected growth in repayment of HECS debt should help contain the

size of public outlays on higher education. Real resources per student in government schools appeared to rise, though further analysis is needed as teacher redundancy payments are included in the data. Operating resources per Australian student in higher education fell until 1991.

HECS represents the main move to shift the burden of financing of education out of the public sector. The charging of fees for postgraduate courses is expanding but, as yet, is not significant in the published statistics. The charging of full fees for all new overseas students from 1990 represents a major source of new revenues to universities in particular. The number of overseas students grew much faster than the number of Australian students. Increased privatisation also occurred in the school sector. In the period 1988–94, non-government school enrolments grew by seven per cent whereas government school enrolments increased only one per cent. Non-government schools are, at most, funded by governments to a little over half the cost of a government school enrolment, though any savings will be at least partly offset by an increase in government funding to lower resource non-government schools. Overall, measured private expenditure on education from 1987–88 to 1993–94 has expanded faster than public sector outlays.

Government expenditure on training in labour market programs expanded very rapidly in 1992–93 and continued growth is still expected, though at a slower rate than projected in *Working Nation*. The total expenditure on programs with a large training component approached \$1200 million in 1993–94, or approaching half the public outlay on VET.

Expenditure by employers from both the public and private sectors on training appears to have expanded more rapidly than employer provision of courses. A further indicator of the size of the expenditure on training in the workplace is the large number of employees—about 600 000—who consider at least part of their time to be spent on the provision of training.

The data reviewed in this paper do not provide detailed information on the experience of particular groups. Some information on participation and achievement by females and males is included. Aspects of the provision of training in the workplace and the growth in labour market programs touch on the experience of particular groups.

The proportion of female students has changed little over the period from 1988. The majority of students in upper secondary schooling and higher education are female. The majority of students in TAFE are male and their proportion rose slightly over the period from 1988 to 1993. More detailed analyses by level and field of study show a varying distribution across levels and fields (e.g. females make up 55 per cent of pass Bachelor university students but less than 40 per cent of PhD students). About 55 per cent of females aged 22 held a qualification or were studying.

In 1994, among 22-year-olds, more females than males held degrees and diplomas. However, only 3 per cent of females held a skilled vocational qualification compared with 20 per cent of males and some 16 per cent of females held a basic vocational qualification compared with 3 per cent of males.

It is difficult from the quantitative data to measure the extent to which the changes in education and training have led to closer orientation to the needs of industry. Higher education grew faster than VET and particularly fast at the level of research degrees and coursework masters degrees. Within both the higher education and VET sectors there was a relatively fast growth in business-related fields. In VET there was an above average expansion of courses for operatives and basic employment and educational preparation courses and also in Associate Diploma level courses. There was virtually no growth in initial vocational preparation in the skilled trades areas. In senior secondary schooling there appears to be rapid expansion in vocational courses but there is, as yet, insufficient information.

Appendix A

Table A1: Expenditure on Government Schools

	Total \$Billion	\$ Per Student	Price Deflator	Total \$Billion Constant Prices	\$ Per Student Constant Prices
1987–88	7.55	3437	90.3	8.36	3806
1988–89	8.31	3784	95.4	8.71	3966
1989–90	8.92	4064	100.0	8.92	4064
1990–91	9.49	4305	105.2	9.02	4092
1991–92	9.84	4421	109.5	8.99	4037
1992–93	10.32	4625	112.0	9.21	4129
1993–94	10.57	4757	113.3	9.33	4198
Increase, 1987–88 to 1993–94	40%	38%	25%	12%	10%

Source: MCEETYA 1995, Summary 1993–94 Finance Statistics from the Government Section of the National Schools Statistics Collection.

Notes: Excludes superannuation.

Data include payments for teacher redundancies.

Price deflator is the deflator for all government consumption expenditure and only an approximate indicator of school prices.

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Table A3: Higher Education Institution Income (\$m)

	Commonwealth Government Grants	State Government	HECS	Fees and Charges	Investment Income	Donations	Other	Total	Operating/ Research Cost Factor*	Total in Constant Prices	Commonwealth Grants in Constant Prices
1989	2808	196	488	252	225	137	169	4274	1.08	3950	2595
	66%	5%	11%	6%	5%	3%	4%	100%			
1990	3081	242	571	406	256	112	186	4855	1.13	4297	2727
	63%	5%	12%	8%	5%	2%	4%	100%			
1991	3372	279	638	537	235	113	286	5462	1.21	4514	2787
	62%	5%	12%	10%	4%	2%	5%	100%			
1992	3548	270	789	618	212	108	416	5962	1.23	4855	2890
	60%	5%	13%	10%	4%	2%	7%	100%			
1993	3616	280	841	753	220	101	649	6460	1.24	5210	2917
	56%	4%	13%	12%	3%	2%	10%	100%			
Increase, 1989-93	29%	43%	72%	199%	-2%	-26%	283%	51%	15%	32%	12%

Source: DEET 1995, Selected Higher Education Statistics 1994.

DEET 1993, Higher Education Funding for the 1994-96 Triennium.

Note: * Cost adjustment factor used by DEET, base December quarter 1987.

Table A4: *Decomposition of Operating Funds in Higher Education—Australian Students*

	1	2	3	4	5	6	7	8
	Real Operating Outlay	GDP Prices/ Education Prices	Real Outlay in Constant GDP prices	Real Outlay/ Student Load	Student Load	Load/ Enrolments	Population Aged 18–24	Enrolments/ Pop. 18–24
1988	0.92	0.96	0.96	1.01	0.91	0.99	0.97	0.95
1989	0.97	0.99	0.98	1.02	0.96	1.00	0.99	0.96
1990	1.03	0.99	1.03	0.98	1.04	1.00	1.01	1.04
1991	1.06	0.95	1.12	0.92	1.15	1.00	1.02	1.12
1992	1.10	0.95	1.17	0.93	1.18	0.99	1.03	1.16
1993	1.14	0.95	1.20	0.95	1.20	0.99	1.03	1.19
Total growth 1988–93	23%	-1%	25%	-6%	32%	0%	6%	25%
Annual Rate of Growth	4%	0%	4%	-1%	5%	1%	1%	4%

Source: Burke 1994, based on data from ABS Cat. No. 3201.0, Cat. No. 3222.0 and data on disk. DEET 1995, Selected Higher Education Statistics 1994, and data from the Higher Education Division. AVCC, Unpublished analysis of Commonwealth funding of higher education, 1983–93.

Note: Non-Commonwealth load assumed funded at the same rate as Commonwealth funded load.

Column 1 = column 2 x column 3.

Column 1 = column 4 x column 5.

Column 5 = column 6 x column 7 x column 8.

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