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ABSTRACT

A study was conducted in Victoria (Australia) to determine college students', graduates', and employers' expectations and experiences concerning employment after graduation. The study sought answers to the following four questions: (1) What proportion of graduates and diplomates in various fields of study, and at different levels, obtain satisfactory employment? (2) What are the views and attitudes of employers concerning the recruitment of graduates and diplomates, the training they expect graduates and diplomates to have, and their reasons for accepting or rejecting graduates and diplomates for employment?, (3) What are the attitudes of graduates , diplomates, and students toward employment?, and (4) How do graduates, diplomates, and students adjust or accommodate their expectations and aspirations to the opportunities available to them? The investigation encountered difficulty in comparing courses of study, defining and measuring rates of unemployment for the graduates and diplomates, gathering relevant background information, and preserving confidentiality. Nevertheless, data gathered in the study were analyzed in a matrix framework, and numerous findings are reported regarding the student-graduate-employer relationship according to the four terms of reference analyzed. The questionnaires used to gather data are included in the report. (KC)

ACER Research Monograph No.11

EDUCATION AND EMPLOYMENT

EXPECTATIONS AND EXPERIENCES OF STUDENTS, GRADUATES AND EMPLOYERS

Warren Jones

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Mrs E. Dale, Acting Deputy Vice-President, Victoria Institute of Colleges
Mr R. Brown, retired director, Research and Corporate Services, Repco Ltd
Mr J. McIntosh, Staff Division Manager, Personal Development, ICI (Aust) Ltd
Dr D. Dickson, Dean, School of Business, Prahran College of Advanced Education to March 1979
Dr M. Hunter, Dean, Faculty of Business, Swinburne College of Technology from April 1979
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Warren Jones
December 1980

INTRODUCTION

A Guide to the Report

The following notes serve as a guide to the structure of the report. They are for the benefit of the reader who may not wish to cover the whole report but only read particular topics of interest.

The report is divided into two parts. In the first part, a description of the origins, terms of reference and dimensions of the study (Chapter 1), is followed by a detailed outline of the framework of the project (Chapter 2). The design of the study is derived from a research matrix which presents diagrammatically the relationship between key research areas and stages in the transition from education to employment. The content or cells of this matrix, discussed in detail in Chapter 2, are used as the framework for the discussion and presentation of the results of the investigation.

Part One also covers the operational phases of the project, including the design of the questionnaires (Chapter 3), some technical aspects of sampling and the classification systems used (Chapter 4) and comments on problems associated with the overall management of the project (Chapter 5).

The results of the surveys are presented and discussed within the general context of the research matrix in Part Two of the report (Chapters 6 to 12). A general description of the survey samples and proposed research methodologies for future studies of student progression in post-secondary studies can be found in Chapter 6.

Chapter 7 which deals with the employment of graduates and diplomates addresses the first term of reference of the study. Within this chapter work experience, levels of job satisfaction and past and future employment patterns for graduates and diplomates are treated as related issues.

The views and attitudes of employers concerning the recruitment of graduates and diplomates, the second term of reference of the study, are analysed in Chapter 9. In Chapter 10 the attitudes of graduates, diplomates and students towards employment, the third term of reference of the study, are compared with those of employers.

On a similar theme the job expectations and aspirations of graduates, diplomates and students and the ways in which these expectations are modified by the available opportunities are discussed in Chapter 8. These findings are concerned with the fourth term of reference of the study.

In Chapter 11 the above material is supplemented with a brief discussion, of related issues such as employers' involvement with the various levels of education, student knowledge of specific job roles, the job seeking strategies of students, and the immediate plans of students upon completion of a course of study.

A summary and the conclusions of the investigation can be found in Chapter 12.

The detailed statistical information used in the development of a sampling plan and some detailed tables of results from the surveys can be found in Appendix I. Copies of all the questionnaires used in the project are included in Appendix II.

More specific details of the content of the research matrix, which was used to describe the key research areas and the groups surveyed, and the appropriate question number from each of the questionnaires used in the study are given in Appendix III.

List of Findings

In the following pages each of the four terms of reference for the study are presented together with the appropriate research findings summarized in point form.

First term of reference

What proportion of graduates and diplomates in various fields of study, and at different levels, obtain satisfactory employment?

Findings

1.1 Graduates and diplomates from 1978 expressed a higher level of job satisfaction in a first job after completing a first course than did graduates and diplomates from 1976.

1.2 Work experience prior to graduation has a positive effect on the level of job satisfaction reported for a first job after completing a first course.

1.3 For those graduates and diplomates not employed at the end of their course:

(a) the median time taken to find a full-time job after completing a course was 1.8 months for both the 1976 and the 1978 graduates and diplomates;

(b) the median time taken to find a full-time job in a field of training was 3.0 months for the 1976 and 3.1 months for the 1978 groups of graduates and diplomates;

(c) Ten per cent of 1978 group and three per cent of the 1976 group were not employed in a full-time job at the time of the survey;

(d) Twenty-three per cent of the 1978 group and 14 per cent of the 1976 group had not found a job in their field of training at the time of the survey;

(e) Graduates tended to find work sooner than diplomates although the difference was not consistent across all courses and areas of study;

(f) Approximately 75 per cent of the graduates and diplomates from the fields of Pharmacy, Paramedical Studies and Maths and Computer Science found full-time work within one month of completing their course.

Second term of reference

What are the views and attitudes of employers concerning the recruitment of graduates and diplomates, the training they expect graduates and diplomates to have, and their reasons for accepting or rejecting graduates and diplomates for employment?

Findings

2.1 The characteristics employers in general considered to be very important when recruiting new or inexperienced graduates and diplomates were, in order of importance:

(a) immediate 'value' to the organization;

(b) the perceived future 'trainability' of the applicant for a managerial position;

(c) specific areas of skill;

(d) the applicant's career objectives; and

(e) a combination of personal qualities such as drive, motivation, presentation and interpersonal skills.

2.2 The characteristics of graduates and diplomates that non-employers considered important when recruiting middle level staff were:

(a) work experience;

(b) specific areas of skill; and

(c) immediate 'value' to the organization.

2.3 The small employers of graduates and diplomates, like the non-employers saw the immediate value to the organization as an important characteristic. By constrast the largest employers of graduates and diplomates preferred equally the qualities 'specific areas of skill', 'applicant's career objectives' and 'the perceived future trainability of an applicant for a managerial position'.

2.4 Employers generally expressed a strong preference for experienced graduates and diplomates. However, the largest employers of graduates and diplomates were more flexible and recruited substantial numbers of new or inexperienced graduates and diplomates.

2.5 The majority of employers found little difficulty during the last three years in recruiting new graduates and diplomates. For those who stated that they had encountered difficulties, the most common reason given was the 'lack of practical experience' in the tertiary level course.

2.6 The most common difficulty in recruiting new graduates and diplomates expressed by employers in the paramedical area was the 'lack of supply'.

2.7 The most common and most successful recruiting technique used by employers was to 'advertise in local and national newspapers'. The largest employers preferred 'visits to tertiary institutions'.

2.8 Employers rated the 'ability to communicate with others' as being the most important quality a new graduate and diplomate should possess.

2.9 The qualities 'self-motivation' and 'ability to work in a team' were highly valued by employers (second and third in rank order of importance).

2.10 There were no noticeable differences in the qualities required of new graduates as opposed to those required of new diplomates.

Third term of reference

What are the attitudes of graduates, diplomates and students towards employment?

Findings

3.1 Graduates, diplomates and students rated the 'ability to communicate with others' as being the most important quality a graduate and diplomate should possess for success in a chosen field of employment.

3.2 The quality 'ability to make decisions' received the second highest rank order of importance by graduates, diplomates and students.

3.3 The quality 'specific skills' was much less important for the older group of graduates and diplomates (1976) than for either students or employers.

3.4 Students would appear to have had a very good understanding of the importance of different characteristics or qualities needed for success in the work environment.

3.5 Seventy-three per cent of the full-time final year students and 53 per cent of the full-time new students claimed to have a firm idea of the work they would like to do on completion of a course.

3.6 Of those new and final year students who claimed to have a firm idea of the work they would like to do on completion of a course, only 10 per cent of the new students and 29 per cent of the final year students displayed a considerable knowledge of specific fields of work.

Fourth term of reference

How do graduates and diplomates and students adjust or accommodate their expectations and aspirations to the opportunities available to them?

Findings

4.1 New students expressed a higher level of aspiration for particular job goals than did final year students.

4.2 Students in general expressed a higher level of job aspiration than did graduates and diplomates at the time of completing a course.

4.3 The lowest level acceptable or tolerated in different job goals or characteristics did not differ significantly between students, graduates or diplomates.

4.4 The most important job characteristics were intrinsic characteristics such as 'people', 'skills', and 'responsibility' and were not sacrificed for extrinsic rewards such as 'salary' and 'advancement' in the individual's system of values. The 1976 graduates and diplomates did however highly value job 'security'.

4.5 The first full-time job achieved by graduates and diplomates after having completed their first tertiary course was below their level of expectation for all of the job characteristics.

4.6 For the job characteristics 'skills' and 'advancement' the level actually achieved by graduates and diplomates in a first job was significantly below the level they expected to achieve in a job in their field of training.

4.7 With an increase in time some job characteristics approached the level aspired to while other characteristics exceeded this ideal level expressed at the time of completing a course.

4.8 The 1976 group of graduates and diplomates would appear to have found initial employment closer to their expectations than the 1978 group.

4.9 Full-time male students had a higher expectation than did full-time female students of finding work in a field of training within four months of completing a course.

4.10 Final year students had a higher expectation than did new students of finding work in a field of training within four months of completing a course.

4.11 The proportion of students (64 per cent) who believed that they had a very good or good chance of finding work in a field of training within four months was similar to the proportion of 1976 and 1978 graduates and diplomates who had actually found work in their field of training within four months.

PART ONE: DESIGN AND IMPLEMENTATION OF THE STUDY

CHAPTER 1

BACKGROUND TO THE STUDY

Origins

A substantial data base describing the first occupational destinations of new graduates and diplomates from Australian universities and colleges of advanced education has been built up by a number of institutions and individual researchers since the early 1970s. The most comprehensive array of material has been published by the Graduate Careers Council of Australia (GCCA). The GCCA data, derived from an annual 'destination survey' of new graduates and diplomates conducted by most Australian universities and colleges over the last eight years, has provided comparative estimates of graduate employment destinations and rates of unemployment. It is largely through the publication of these data that the rise in 'unemployment' of first degree graduates and diplomates (of the order of a four-fold increase between 1974 and 1979) has become known and widely discussed.

The reports prepared by the GCCA, the numerous studies by Cox (1973a, 1973b 1974, 1975a and 1975b) carried out on behalf of the Victoria Institute of Colleges (VIC) and a concern for unemployment among graduates and diplomates of the colleges were all precursors for this study. Cox's work not only investigated the job destinations of graduates and diplomates but also considered job mobility, attitudes to work, and the educational and socioeconomic background as factors influencing employment. Cox's study of the 1972, 1973 and 1974 cohorts of graduates from the VIC colleges and the follow-up of a sample of the 1972 group in 1973 and again in 1974 makes it one of the few studies to tackle the problems of job mobility, job satisfaction and course satisfaction for graduates and diplomates of colleges of advanced education (CAE's).

These studies have highlighted several interconnected problems such as the rising unemployment rates for graduates and diplomates, the declining employment prospects for future graduates and diplomates, student expectations of work, job mobility and job satisfaction, employers needs and manpower requirements. Other studies have focused upon the transition from school to work.

Each topic has been the focus of intensive research in the past but the studies undertaken have generally failed to provide an integrated approach to the transition from education to employment at the tertiary level of education.

The Victoria Institute of Colleges (VIC) requested the Australian Council for Educational Research (ACER) to formulate a research proposal to examine some of these concepts. Overall objectives for the proposal, considered important by the the VIC and the ACER were the relevance of the research for planning by the VIC and the colleges,

the relevance of data to careers and employment officers within the colleges, and the need for greater consideration to be given to the views of employers. The study was supported by funds provided by the Trustees of the Malcolm S. Moore and Annie V. Moore Estate who were concerned about these issues and emphasized the need for the involvement of employers in the study.

The Research Proposal

The central theme of ACER's proposal for this study was to regard the transition from education to employment as three stages. The stages were secondary school studies, tertiary studies, and finally work. The transition was not regarded as a uniform or continuous process in that several periods of work during tertiary studies would be possible just as several periods of tertiary studies during a working career would be possible.

In the study of the transition from education to employment these stages were represented by four groups: new students, final year students, graduates and diplomates and employers. The study, conducted at one point in time, had the advantages of simulating a longitudinal study as well as providing information on samples of the different groups at the same point in time.

This approach provided considerable scope for the type of problems which could be investigated. Those considered important in the proposal were the employment trends for students, graduates, and diplomates; employers' views of current tertiary programs; and the attitudes and expectations of students, graduates, and diplomates.

Terms of Reference

Further discussions between the VIC and the ACER yielded four interrelated terms of reference for the study. The terms of reference sought information related to the following questions.

1 What proportion of graduates and diplomates in various fields of study, and at different levels, obtain satisfactory employment?

2 What are the views and attitudes of employers concerning the recruitment of graduates and diplomates, the training they expect graduates and diplomates to have, and their reasons for accepting or rejecting graduates and diplomates for employment?

3 What are the attitudes of graduates, diplomates and students towards employment?

4 How do graduates, diplomates and students adjust or accommodate their expectations and aspirations to the opportunities available to them?

Dimensions of the Study

The important objectives of the study were to extend the comprehensive data base already available on graduates and diplomates from colleges affiliated with the VIC and to obtain new information on the attitudes of current students and employers towards employment. To have included the universities or other colleges of advanced education from Victoria or other States would have complicated the project design and greatly exceeded the resources available. Hence the study was limited to colleges and institutes affiliated with the VIC.

Contained within the terms of reference listed above were several additional constraints upon the study. These constraints were in the form of the types of groups included in the study. These groups specified the dimensions of the project and the following definitions were used.

1 Fields of study. All approved courses offered by the colleges were included in the study with the exception of Teacher Education, Education, Law and Jurisprudence, and Forestry and Agriculture.

Teacher education courses were excluded from the study because similar programs were offered by the State College of Victoria. Teacher education students do not form a significant part of VIC enrolments except for some small colleges. The other courses were excluded because of their small student numbers.

2 Levels. Only degree (UG1) and diploma (UG2) courses were included. Associate diploma (UG3) or equivalent courses and certificate courses were excluded because of the wide variety of courses available and possible overlap with courses in the Technical and Further Education sector.

3 Students. A new or first year student was defined as any student who commenced an approved course for the first time in 1979. For example students who had transferred to their current course or who had completed other tertiary qualifications were included in this group. Students who were repeating a course were not included. A final year student was defined as a student who expected to complete an approved course of study during 1979.

4 Graduates and diplomates. A graduate was defined as a person who was awarded a degree (UG1) from the VIC in either 1976 or 1978. A diplomate was defined as a person who was awarded a diploma (UG2) from any of the VIC colleges in either 1976 or 1978.

5 Employers and non-employers. An employer was defined as any government department or government authority or organization or company who was a known employer of graduates or diplomates.

A non-employer was defined as any organization that did not usually employ graduates or diplomates (except in a consulting capacity) from either the advanced education or university systems.

Mainly Victorian employers and non-employers were included in the study. Generally speaking the office responsible for the recruitment of graduates was contacted or if regional offices existed then the head office (which was often interstate) for that organization was contacted. No hard and fast rule could be made since policies differed for different companies and government authorities or departments.

In summary, the study involved four groups (new students, final year students, graduates and diplomates, employers and non-employers) who were investigated at one point in time to examine the relationships between the views and expectations of these groups. While this study was cross-sectional in nature and some important relationships might have been more clearly expressed by a longitudinal study examining the same group of students at different stages in their careers, it was hoped that this investigation would yield information that had not been sought by previous research.

CHAPTER 2

DESIGN OF THE STUDY

A Conceptual Framework and Development of the Terms of Reference

The transition from education to employment for an individual extends from early educational experiences through career decision-making processes, work experience, to employment or further education and ultimately to the development of a career. Furthermore, the development of a career might or might not involve several periods of further education, changes in a field of work or simple job changes.

The effects of variables such as home, school and community influences; social and economic change; employment and income have been recognized by researchers (Lipsett, 1962; Wolfbein, 1967) but in general have not been well integrated within theories of career development. In the main different research approaches to the study of career development and career decision-making (non-psychological, psychological, economic or sociological), have failed to take into account many of these influencing factors and the problem-solving processes of career-decision making.

Unruh has summarized these criticisms by saying:

> The economic and decision theories make large assumptions about the availability of information and the ability of individuals to handle it. The sociological and non-psychological theories place great emphasis on environmental control of behaviour. The psychological theories, on the other hand lean toward constructs that are difficult to measure and control. The general theories are composites of various points of view which frequently fail to describe the actual processes in any idiosyncratic way. (Unruh, 1979:3)

Social learning theory as applied to the process of career decision-making has provided a broad conceptual framework which overcomes many of these problems. Social learning theory in this context attempts:

> ... to explain how educational and occupational preferences and skills are acquired and how selection of courses, occupations and fields of work are made. It identifies the interactions of genetic factors, environmental conditions, learning experiences, cognitive and emotional responses and performance skills that produce movement along one career path to another. Combinations of these factors interact in different ways to produce different decisions. (Krumboltz, 1979:19)

The theory treats career decision-making as a life-long process, a continually changing activity influenced by a wide range of both external and internal factors.

In any single study, it is impractical to identify every intervening variable and to consider its likely effect on an individual or a group of individuals. By using a theory of social learning to explain the career decision-making process it was possible to provide a conceptual framework for this study out more importantly to illustrate the complexity of the problems facing individuals in selecting and following a career.

By way of illustration some of the research areas which deal with the many aspects of the transition from education to employment are listed below. Very few of these studies were carried out in Australia:

1 Career decision-making and career development theories (see Blau et al., 1956; Tiedeman, 1961; Holland, 1962 and 1966; Ginzberg, 1971; summaries in Peters and Hansen (eds.), 1971; Mitchell et al. (eds.), 1979).

2 The transition from school to work (OECD, 1977a; see a review of the Australian literature by Sturman, 1979; Fitzgerald et al., 1979).

3 The transition from school to tertiary studies in Australia (see Maddox, 1970).

4 Progression through tertiary studies. For example, research into course mobility, wastage and attrition rates, and dropouts (see the report prepared for the Australian Vice-Chancellor's Committee by Department of Education and Science (1971) entitled 'The 1961 Study' and the Report of the Committee of Inquiry into Education and Training (CIET) Vol.2, Appendix D, 1979 for a review of student progress in Australian colleges of advanced education and universities).

5 The impact of college or university environment (see Astin, 1965, 1968, 1977; Astin and Panos, 1969; and a review of the literature by Feldman and Newcomb, 1969).

6 Work experience and work education programs (see Smithers, 1966; Henry, 1967; Gore, 1972; and Wilson, 1979).

7 Job destinations and job mobility (see various reports by the Graduate Careers Council of Australia; Cox, 1973a, 1973b, 1974, 1975a and 1976b; Greenaway and Williams (eds.), 1973; reviews by Schroeder, 1973; OECD, 1977b).

8 Job satisfaction (see Vroom, 1964; Locke, 1969; Wanous and Lawler, 1972; Killingsworth, 1974; Andrews and Withey, 1976; Glaser, 1976).

9 Job or employment expectations (see Jenkins, 1973; Mortimer and Simmons, 1978; O'Brien and Dowling, 1978).

10 Manpower planning (see Carnegie Commission on Higher Education, 1973; OECD, 1978; a review by Niland, 1979; Department of Employment and Youth Affairs, 1979).

11 The attitudes of employers towards recruitment and education (see Glaser, 1976; McIntosh, 1977; OECD, 1977b; Brown, 1978; Miller, 1979; Institute of Public Affairs (NSW), 1979).

A combination of the concept of stages (school, tertiary studies, work) in the transition from education to employment and the research areas which have been listed above provided the basis of the terms of reference of the study which was couched within the broad conceptual framework of a theory of social learning.

The Research Matrix

The terms of reference for the study raised four specific questions. These questions were viewed as a summary of the interaction between some of the specific areas of research referred to previously and the stages in the transition from education to employment. A research matrix was therefore constructed and using this approach it was possible to devise an integrated research program to consider a range of important issues.

The two axes of the matrix identified the key research areas and the stages in the transition from education to employment. The content of the matrix (cells) was defined by the type of information sought by questionnaires from each group. In other words the cells described the interaction and overlap between groups in a number of key areas and on specific issues. For example 'employment' as a key research area was broken into a number of smaller related topics (work history, job satisfaction, employment trends) and covered a number of the groups surveyed. The questions raised in the terms of reference for the study are therefore contained within the matrix.

The matrix illustrating the connection between the stages and the key research areas is shown in Figure 2.1 and in greater detail in Appendix 3. The matrix design enables comparisons to be made across different groups. Possible comparisons are shown in Appendix III with heavy vertical lines connecting the cells within the key research areas. It should be noted that comparisons of this kind require careful interpretation since the same group of individuals is not being followed from one stage to the next. Comparisons can also be made between key research areas. The effects of mediating variables (for example, work experience) on job destinations and occupational mobility can be assessed in this manner.

Content of the Research Matrix

The research matrix shown in Figure 2.1 describes the key research areas and stages generated from the terms of reference for the study and the brief review of the previous research. The content of the individual cells and the comparisons which can be made between groups are discussed in this section. Some attention is also given to appropriate research findings and the implications of these findings for the current project.

As the research program was carried out using mailed questionnaires (see Chapter 5 for explanations), the problems associated with the design and measurement of specific concepts (and questions) are also considered in this section.

	Key Research Areas					
Groups	Background information	Employment	Expectations	Recruitment	Attitudes	Related issues
Students	Age, Schooling	Work experience	Job expectations		Perceived qualities of new graduates and diplomates	Ideas of work Future plans Job seeking strategies
Graduates and Diplomates	Age, Schooling	Work history Job satisfaction	Jobs expectations Jobs achieved		Perceived qualities of new graduates and diplomates	
Employers and Non-employers	Activities and size	Employment trends		Techniques Style Difficulties	Perceived qualities of new graduates and diplomates	Involvement with educational programs

Figure 2.1 The Research Matrix

Background Information: A Basis for Classification

Graduates, diplomates and students. There was a wide variety of variables which could be used to describe the background characteristics of graduates and students. The characteristics which have been commonly used in the past are age, sex, type of secondary school attended, type of tertiary award gained, father's occupation, family income, family size, ethnic origin, and the location of the home and school (city or rural areas). These antecedent variables have been used to predict such outcomes as academic achievement (at all levels), social mobility and job status and success.

As the main objective of this study was to look at the relationship or links between education and employment, socio-economic status variables were given a lower priority in the study. The research populations were to some extent 'pre-selected', since students from families with a professional background are more likely to undertake tertiary studies than those from working class backgrounds. The actual transition from school to tertiary studies or the effects of education and socio-economic status on the transition warrant detailed investigation but were beyond the scope of the project. Horne (1975) and Lewis (1976) have conducted research in this area and Anderson et al. (1980) have addressed this problem to some extent with their study on the social composition of students in higher education since the abolition of tertiary tuition fees.

The variables which were given high priority were, not unexpectedly age, sex, and educational background. Age can not only be used as a reference point to determine time intervals (that is time between school and further study) but can also be used to determine the effects of maturation on job expectations and job satisfaction. From an educational policy point of view, differences between the sexes in relation to job prospects is an extremely important issue. The main research question applicable to this study was: Do males have higher job expectations than females? The educational background characteristics considered to be important were school performance, college course performance, time to complete a course, attendance pattern, type of institution attended, course preferences and type and number of courses attempted or completed.

To have collected data on all of these issues by questionnaire would have extended the length of the questionnaire considerably and would, quite conceivably, have influenced the response rates for the survey. Unfortunately the time required to access these data from college records was beyond the resources of the project, and also posed serious problems because of the confidential nature of the information sought. These problems are dealt with in some detail under the heading of 'Project Management' (Chapter 5).

It was argued that the most relevant information on educational background could be obtained from a students' educational history. This information would provide some insight to academic performance. For example, a student who listed a series of courses

which had not been completed or a series of course transfers would provide just as important information as the student who listed a series of courses which had been completed. Such a list might range from a certificate level course to a master's degree.

The use of educational history had the advantage of providing a basis for classifying students into various groups for further data analyses. More specifically students can be classified into two major groups: the educationally inexperienced or those who were enrolled in or who had completed only one tertiary course, and the educationally experienced or those who were enrolled in or who had completed two or more courses. The latter group are of interest when exploring job mobility but it is not possible to identify readily this group from college records and to use this information when setting up a sampling frame. Hence the variables which were used in the questionnaire to gather the relevant information were:

1 name of institution attended;
2 major subjects or field of study;
3 award gained (or enrolled in);
4 attendance pattern (full-time, part-time or sandwich);
5 year and month course started;
6 year and month course finished; and
7 year and month course discontinued (if applicable).

Employers and non-employers. The most obvious means of classifying employers was by their field of operation. If the Australian Standard Industrial Classification (ASIC) had been used by itself, problems would have been encountered with the accurate grouping of large multinational companies that were involved in several activities such as manufacturing, mining, transport and storage. Further the public sector, which employs the majority of new college graduates and diplomates, mainly embraces three major groups in the ASIC system. Those groups are Electricity, Gas and Water (usually government instrumentalities), Community Services, and Public Administration and Defence.

The Graduate Careers Council of Australia uses a system whereby employers in the public sector are split into a number of groups such as the Australian Public Service, Defence Services, Local Government and State Government instrumentalities. However this system does not adequately describe the employer in the private sector. A combination of the two systems was seen to be an appropriate approach to classification or grouping.

Another basis for classification was the actual size of the organization. This was reflected in (1) the annual sales figure or budget allocation, and (2) the size of the workforce. Neither was a perfect descriptor but again provided a simple means of comparing or grouping organizations.

A third descriptor closely related to the above was the distribution of the academic qualifications of the employees of the organization. The three descriptors used simultaneously provided a picture of the type, size and possibly recruiting style of the organization. To give specific examples, a research organization would be 'qualifications intensive' and probably have an average budget allocation and a small workforce. On the other hand a large manufacturing company would be labour intensive and have a relatively small proportion of highly qualified personnel and a large annual sales figure.

Specific numbers of employees, specific dollar turnover and accurate percentages of employees with qualifications were not requested in the questionnaires sent to employers because of the time required for an employer to furnish such detailed information. Instead ranges were seen as appropriate measures for the first two descriptors and rough percentages for the information on qualifications.

The only other minor variable which was used to group employers was an index of the stability of the organization over the last three financial years (1976 to 1979). This was assessed in terms of changes in workforce numbers and in sales or budget allocations.

Other variables such as recruiting techniques or an employer's involvement with further education could be used as a basis for establishing the future plans to employ graduates.

Employment

The key research area of employment was divided into three parts for the project. The three parts were:

1 the employment of students;

2 the employment of graduates and diplomates, including measures of job satisfaction; and

3 the employment trends (past and future) of employers and non-employers of graduates and diplomates.

Perhaps the simplest way of analysing the employment of graduates, diplomates and students is to look at the time when periods of work were undertaken. For the purposes of this study the term 'work experience' was used to include work periods before or during a tertiary course. The term 'work history' was used to describe periods of work after a first tertiary award was gained.

Work experience. In recent years several important changes have occurred in the work habits of young people leaving the secondary school system. The numbers progressing from the secondary school system to the tertiary system have changed substantially in the last five years. The proportion of students who completed Year 12 at secondary school and enrolled in the following year in a tertiary course has declined from

approximately 55 per cent in 1974 to just under 46 per cent in 1979 (Karmel, 1979:7). This suggests that an increasing proportion of Year 12 school leavers are entering the workforce instead of progressing immediately to further studies. Karmel has claimed that there is no evidence to support the argument that the decline in tertiary enrolments is being taken up by technical and further education enrolments (Karmel, 1979:6). Another interesting feature is that the average retention rates to the final year of secondary school in Australia have increased substantially from approximately 23 per cent in 1967 to approximately 35 per cent in 1978 (Karmel, 1979:5). However, the retention rates for males have been dropping since 1972, while the retention rates for females have been steadily increasing.

Associated with these changes has been the increase in the proportion of older students enrolling in tertiary courses. In 1974 the under 23 years of age group accounted for approximately 60 per cent of the enrolments in universities, 68 per cent in the colleges of advanced education and 44 per cent in technical and further education institutions. These proportions have been slightly reduced to approximately 58 per cent, 61 per cent and 42 per cent respectively for 1976 (Tertiary Education Commission, 1978:31). Conversely there has been a corresponding slight increase in the proportion of older students (23 to 39 years and over 40 age groups) who have enrolled in post-secondary courses. Mature age students as this group is often referred to, have been the subject of a detailed investigation by Dickson, Killingsworth and Wilkinson (1979). This change in the structure of the student population of tertiary institution is likely to have far reaching effects on future career guidance programs, teaching practices, curricula, student attitudes and employment prospects.

A recent study by Wilson (1979) has expounded the merits of voluntary work experience programs for secondary students (Year 8 and above) introduced into Victorian schools in 1970. She concluded:

> ... that work experience does have worthwhile benefits for students including work related benefits and aspects of general, social learning. This indicates that work experience should not be seen as something associated only with the preparation for employment, but as a learning experience with many important outcomes associated with the total curriculum of the school. (Wilson 1979:107)

While it is not appropriate in this report to debate the likely impact of school work experience programs, it should be recognized that changes have occurred in the structure of the tertiary student population and that techniques should be devised to assess the effect of work experience on student expectations of employment.

Some of the dimensions of work experience considered important in the present study were:

1 the length of work experience;

2 the placement of the work experience in relation to a course of study (before or during a course); and

3 the appropriateness of the work experience (in or out of the field of training).

The length of work experience was measured in months and part-time and casual jobs were converted to full-time equivalents.

It is important to establish the placement or position of the work experience in relation to a course of study since it can be hypothesized that work experience before commencing a course is likely to increase the probability of a student making a correct course and career choice and that work experience during a course is more likely to realise a student's expectations of work once he or she has graduated. This concept is particularly important for students studying on a part-time or a 'sandwich' basis.

The following specific questions on work experience were regarded as being important issues in the current study.

1 What proportion of tertiary students have had work experience prior to and during a course of study?

2 What is the extent (time) of this work experience?

3 For those with some work experience, what proportion had experience in a primary, secondary or tertiary field of training?

4 How does work experience affect employment prospects and job satisfaction after graduation?

Work history. The only cumulative data available to describe the job destinations of graduates and diplomates in Australian universities and colleges of advanced education have been provided by the Graduate Careers Council of Australia. The data provide information on the employment status of each new cohort of graduates and diplomates at 30 April each year. Employment status in the GCCA studies involves a combination of several variables: activity (employed or unemployed), type of employer (government, private company etc.), employer's activity, time in that job, job description, salary, and whether or not the graduate is seeking alternative employment.

While these data can provide estimates of the unemployment rates for first degree graduates and diplomates and a description of the type of work the graduate is involved in, the GCCA survey does not examine job mobility, job satisfaction, the relationship between previous educational qualifications and job mobility, length of unemployment before and after graduation, and involvement in other activities (for example, travel, domestic activities) both before and after graduation. Cox (1975a) has provided some information on job mobility and job satisfaction. In her follow-up study of a group of 1972 VIC graduates, job mobility varied considerably according to occupational group. On average only 20 per cent continued to hold the same job that they held prior to qualifying two years earlier.

When considering unemployment rates it was necessary to establish a time base and a reference point from which to work. In this study the reference point was taken as the

month a course was completed. This information was obtained from the educational history section of the questionnaire. This reference point could vary slightly from course to course. The time base then became the time taken (in months), after completing a course, to find a job. The OECD (1977a) for example have noted the scarcity of this type of data for young people entering the workforce for the first time. The only appropriate Australian data available have been produced by Williams et al. (1980).

A more accurate procedure for establishing the time base or time taken to find a job would be to start from when a graduate first commenced looking for a job. This might or might not be before a course was completed. Likewise some students might take a break (of some months) after completing a course and then actively seek employment. Since this study dealt with graduates and diplomates who graduated from courses in 1976 and 1978, it was felt that it would be unreasonable to expect the respondents to recall the date of their first job application. In the absence of detailed information on the 'time of job applications' and 'number of job applications', the use of the common reference point (the month the course was completed) seemed appropriate.

The second element used to describe employment after graduation (work history) was job type. Most studies have used the terms full-time, part-time and casual as job descriptors. These categories are reasonably satisfactory when the time spent in part-time and casual jobs is converted to full-time equivalents.

However, job type (for example, part-time) would not say anything about the individual's desire for that particular job. Some graduates might choose to have only one part-time job or a part-time job together with a full-time job. Others might be forced into part-time or casual work because no full-time jobs were available. The GCCA has estimated that 3.3 per cent of the 1979 first degree college graduates and diplomates (who completed courses in 1978) were part-time or casually employed on the 30 April 1979 and were not seeking full-time employment. Another 2.4 per cent were unavailable for full-time work. A further 7.4 per cent were employed casually or on a part-time basis but were seeking full-time employment (GCCA, 1979).

The third element used to describe work history was the appropriateness of the job held. That is, was the job in or out of a field of training? This element was used also to describe work experience which has been discussed previously.

Consequently, the details sought in the questionnaire which related to work experience and work history (and other activities) were:

1 job or activity number (that is a sequential number given to all jobs over two months that an individual had been involved with);

2 exact description of the job or activity (for example, domestic duties, unemployed, travel);

3 employers' activity;

4 month and year job or activity started;

5 month and year job or activity completed; and

6 job type (full-time etc.).

From this information plus the information provided in the 'educational history' sections of the questionnaire each individual job was classified as being either in or out of a field of training. This task was relatively straightforward for cases with only one degree or diploma and one or two jobs before or after graduation, that is with cases with only a first field of training. The task was much more complex with cases with two or more awards (i.e. the 'educationally experienced' graduates). In this situation the dates given by the respondent became very important in determining whether a particular job was in a first, second or third field of training. For a few cases, no jobs were held in a first field of training, only in a second or third field.

The use of a job description index might have produced a more valid measure of this concept but the coding of responses would have been extremely time consuming for very little net gain.

Job satisfaction. Together with investigations of work experience and work history, job satisfaction has probably received more attention than any associated concept. Bordow (1974) has claimed that there have been over 4000 articles published on the topic and the research has covered all occupational levels.

Job satisfaction has not been regarded as a homogeneous construct. It has been conceptualized in terms of job performance, job attributes (and structure) and work values. Job satisfaction has also been interpreted in terms of intrinsic and extrinsic factors which, generally speaking, represent a combination of elements of job performance, job attributes, work values and job environment. For example, Centers and Bugental (1966) have shown that blue-collar workers valued extrinsic factors such as pay and security, more highly than intrinsic factors such as interesting work and provision for self-expression. The reverse was true for white-collar workers.

Herzberg (1966) has claimed that extrinsic rewards reduce job dissatisfaction without necessarily increasing job satisfaction. However, Killingsworth (1974) using Herzberg's concept of satisfiers (motivator variables in work satisfaction) and dissatisfiers (hygiene variables or extrinsic rewards) demonstrated that both types of variables operated as satisfiers. More recently, O'Brien et al. (1978) have commented that the development of theories of job satisfaction has resulted from a concentration by researchers on dissatisfaction with narrow, repetitive and simplified jobs.

The measures of job satisfaction most frequently used have been traditional psychological scales such as the Job Descriptive Inventory and the Minnesota Importance Questionnaires and specific questionnaires and interview schedules developed to measure the 'frequency of occurrence' of job satisfaction elements (pay, security, working with others). These scales while describing all of the facets of job satisfaction, have, in general, failed to account for the individual's overall feeling of job satisfaction which

allows the individual to weigh up the pros and cons of a job. For example, it would be most likely that an individual is quite satisfied with the pay and promotion elements of a job but is totally dissatisfied with the supervision and working environment elements. Following this line O'Brien et al. (1978) have defined job satisfaction as:

> ... a general measure of the degree of adjustment of the individual to the job. It is a judgment made from the individual's frame of reference, of how much he experiences relative to what he wants. (O'Brien et al., 1978:7)

For the purposes of this study it was not appropriate to include detailed measures of job satisfaction for all jobs held by an individual but to employ a broad index which could be used to assess changes in overall job satisfaction with changes in the number of jobs held.

The elements commonly mentioned in the literature which were used to derive this broad index were: salary, advancement or promotion, security, responsibility, interpersonal relations, skill utilization, work itself, status, variety, achievement, supervision, accommodation (working environment), company policy, self-actualization, education, pressure, and health. Only the first six of these elements were used as cues to obtain an overall job satisfaction rating from students, graduates and diplomates.

A seven-point scale, similar to that used by Andrews and Withey (1976) in their work on social indicators of well-being and specific life concerns, was used as a basis for measuring the satisfaction for each job (or activity). Thus a single 'job satisfaction score' ranging from a value of 1 (terrible) to 7 (delighted) was obtained for each job when the six elements, used as cues, were evaluated by the respondent. This allowed the respondent to place more weight on one element than another but still give an overall rating. This measure of job satisfaction has face validity only. No attempt was made to evaluate the contruct validity of the measure.

The same six elements were used to describe the job expectations and changes in these expectations of students, graduates and diplomates.

Employment trends. The third part under consideration from the key research area of employment was an analysis of the trends in the employment patterns of graduates and diplomates from the employers and non-employers points of view.

The dramatic changes in the employment opportunities or demand for graduates and diplomates have been documented by the Department of Employment and Youth Affairs (1979). Their forecasts are based on a time series analysis of the GCCA annual survey data and statistics from the Australian Bureau of Statistics (ABS) for a period between 1972 and 1978. The forecasts indicate that in the near future, graduates and diplomates from particular areas are likely to face severe competition for jobs.

In the present study a manpower planning approach was adopted where employers and non-employers were asked what their future needs for graduates and diplomates were likely to be. However, it was beyond the resources of the study to try to assess, in

absolute terms, the number of graduates and diplomates required for particular areas for the next five years. The research methodology used made no pretence at accurate manpower planning. The basic philosophy adopted was to establish trends in employment patterns for graduates from the major areas of study so that it would be possible to identify further related research. Such research could be coupled with course evaluation studies in particular areas of study. Hence the approach used could be regarded as a pilot manpower planning exercise, designed to detect possible problem areas based on the consumer's (employers) opinion rather than past trends, a style of research noted for a failure to predict future needs (Mann, 1978; West, 1978).

The initial task was to establish employment trends for the last five years. This provided a base line to check projected future trends. A simple three-point scale ranging from 'noticeable decrease' to 'remained static' to 'noticeable increase' was used to detect past changes in employment patterns. The term noticeable was defined as approximately a 25 per cent change. Significant changes were also assessed using 50 per cent change as a criterion. The same method was adopted to establish trends for the next five years.

Several points need to be made at this stage. Firstly, the questionnaire was primarily concerned with the employment of new graduates and diplomates, that is, with persons who had just completed a tertiary course. There is some evidence to suggest that experienced graduates and diplomates have little difficulty in finding suitable employment. For this study an experienced graduate was defined as a person with at least two years of relevant work experience after completing a course. Sandwich type graduates were not included in the experienced group.

Secondly, it was not feasible to distinguish between the employment trends for graduates from both full-time and part-time courses. It was assumed that employers would express preferences in employing graduates depending on the range of applicants received for a particular job. Further, part-time graduates might or might not have relevant work experience.

The employment trends established for specific areas of study refer to the employment of graduates and diplomates from both the university and college of advanced education sectors. But overall changes in the sources (university or CAE) of graduates and diplomates were established. This, in particular, would be relevant data for educational planning authorities.

Employment officers in the universities and CAEs have tended to support and encourage existing employers of graduates and diplomates. It has been argued that the traditional non-employers of graduates or diplomates, usually from the small business operation, should be actively sought out and encouraged to employ graduates and diplomates and hence change the distribution of qualifications amongst employees. In a recent study by Brown (1978), the attitudes of graduates towards working in small manufacturing firms and the attitudes of small manufacturing firms towards employing

graduates were investigated. He found that 50 per cent of graduates preferred to start their career in a large firm, but nearly 60 per cent of those indicated that this might change as their career developed. From the graduate's point of view the advantages of working in a small firm were associated with intrinsic job factors, the disadvantages were mainly associated with extrinsic job factors.

For those small manufacturing firms which did employ graduates the overwhelming demand was for technical graduates or specialist graduates. This demand reflected the design, development and production activities of the firm. Increases in the demand for graduates by such firms would only be paralleled by expansion, changes in the economy or in technology. The situation was found to be considerably bleaker with firms which did not employ graduates. Brown reported that the most common reason given by small firms was that they (the firms) were too small or had limited or static technology. These firms also expressed a preference for experienced personnel. Thus Brown concluded that:

> ... hopes that the small firms sector might provide a large increase in jobs for graduates in the short term are unfounded. (Brown, 1978:57)

There are no comparable data available for Australia. If the basic philosophy of the advanced education sector (that is vocationally oriented education) is accepted, then it is reasonable to expect that an employment market exists for a proportion of new graduates but more likely for a higher proportion of new diplomates. To test this hypothesis random samples of employers associated with three major employer organizations were surveyed. The employer organizations were: The Metal Trades Industry Association, The Victorian Chamber of Manufactures, and the Victorian Employers Federation.

The main thrust of this part of the study was to:

1 establish if a firm had ever employed a graduate or diplomate;

2 establish future plans to employ graduates and diplomates, noting the specific areas of employment; and to

3 establish likely problems in recruiting personnel, foreshadowed by employers in this category (non-employers).

The survey of the employment trends of employers and non-employers had several important likely outcomes. Firstly, it would identify anticipated changes in employment prospects for new graduates in specific areas. Secondly, it would identify current problems with the supply of graduates and diplomates. Thirdly, it would provide an insight into other possible types of employment, and the role of the small employer would be considered in this regard. Finally, it was hoped that the data would provide basic information for students about to undertake tertiary studies or employment. Krumboltz's discussion of factors influencing entry behaviours into educational or occupational alternatives illustrates this point with the following proposition:

> An individual is more likely to take actions leading to enrolment in a given course or employment in a given occupation or field of work if that individual has been exposed to learning and employment opportunities in that course, occupation or field of work. (Krumboltz 1979:47)

Expectations

In the previous section on employment, job satisfaction was conceptualized in terms of job performance, job attributes and work values. In that discussion six elements were used to provide an overall description (and measure) of job satisfaction. They were: salary, advancement, responsibility, security, skills-utilization, and interpersonal relations. The same variables were used to investigate the work expectations and the adjustment of expectations of students and graduates, the fourth term of reference for the study.

A recent study by O'Brien and Dowling (1978) served as a useful introduction to the study of job expectations. They showed that there was little difference between the type of job students aspire towards and the type of job students expected to achieve. In their study the bulk of the students (64 per cent) aspired to a job in the professional and technical areas but in reality only 13 per cent of all Australians were employed in these areas. The authors attributed this finding to the fact that over 50 per cent of the students in their sample stated that they had not received career guidance on future jobs and they believed that students lacked flexibility in interpreting careers advice.

It would be reasonable to expect that young people have high job aspirations especially those who had undertaken tertiary studies with some clear view of their future work. Job aspirations however, would not always appear to be accurate or realistic. It could be expected that the job aspirations were different for different groups of students or graduates (from different courses) and were influenced to some extent by knowledge of employment opportunities in the field or an intimate knowledge of specific types of job roles. Also knowledge of specific job roles would vary according to a students' educational and work experience. This question is taken up at a later point in this report under the heading 'Related Issues'.

It has already been noted in other research that the job aspirations and expectations of students do not differ markedly. A key question therefore is: What do students or graduates do to adjust to the realities of the job market? Do they anticipate and expect 'lower level' jobs, unrelated to their field of training or do they wait for the right job?

Part of this question can be answered when considering the time to find employment and the time to find employment in the field of training (refer to the previous discussion in the key area of 'Employment'). The job mobility (and job satisfaction) of graduates and diplomates is also important. Gottfredson (1977), whose

work in this area is relevant, notes that considerable 'floundering' takes place early in the career of average workers but this stablizes with a corresponding increase in age.

In this investigation the problem was approached by using the notion of 'value stretch' introduced by Rodman (1963) and developed by Della Fave (1979). Value stretch is represented by the range of values held by an individual for a particular social goal. Thus values are represented by a range from maximum to minimum level and not by a single fixed point. The notion was originally developed to explain differences in social goals as a function of socio-economic status. This broad concept has been used in this study to establish firstly, the job goals for groups of students and graduates, and secondly, the changes in these goals when the influence of job prospects and job realities are taken into account.

A job, described in terms of the elements used to assess job satisfaction (salary, advancement, security, responsibility, skill utilization and interpersonal relations), can be rated at:

1 the highest level one could reasonably hope to achieve (highest level of aspiration or ideal level);

2 the level one could expect to achieve (middle level or expected level); and

3 the level one would tolerate (bottom level or level tolerated).

The 'hierarchy of values' (after Rodman 1963, Della Fave, 1979) for job goals is shown diagrammatically in Figure 2.2.

	Hierarchy of values (Value range)			Actual achievement	
Job characteristics	Top of range	Middle of range	Bottom of range	First job	Current job
Salary	6	4	2	4	4
Advancement	7	4	4	6	6
Security	7	6	2	4	5
Responsibility	6	5	4	5	6
Skill & utilization	6	4	2	4	4
People	6	4	4	3	4
	↑	↑	↑	↑	↑
	Level hoped for	Level expected	Level tolerated	First level achieved	Current level of achievement

Ratings recorded
7 = Very high
1 = Very low

Figure 2.2 A Measure of Expectations: A Typical Profile

For each value level a rating scale of 1-7 was used, so that each job characteristic or job goal was rated between 1-7 for each level (hoped for, expected and tolerated). In the case of graduates and diplomates the achievement of each goal was also rated for the first job after graduation and for the current job. A value of 7 represented a very high level, a value of 1 represented a very low value.

This design allowed for:

1 the quantification of the 'range of values' for specific job goals for new students, final year students and graduates and diplomates;

2 a comparison of the 'value stretch' (difference between level aspired to and lowest level tolerated) for the different populations; and

3 the possibility of establishing a hierarchy of job goals and changes in this hierarchy with the attainment of a first job after graduation.

It was hypothesized that the level of aspiration of new students would be significantly higher than for final year students. Final year students were considered to be more likely to have moderated their aspirations in the light of impending employment. As a result the range of values (value stretch) for first year students was considered likely to be higher than for final year students. Further, it was hypothesized that the level tolerated would be lower for final year students than for first year students. Secondly, there was likely to be some 'trading off' of values as a student approached the lowest level tolerated. It was hypothesized that the hierarchy of goals would change as the bottom of the value range was approached, with extrinsic factors such as salary and security becoming the most important goals.

For graduates and diplomates the difference in the ratings of job characteristics (for example, advancement and salary) for the first job after graduation and the level aspired to was used as another measure of job satisfaction. The closer the level of achievement to the level aspired to, the higher the degree of job satisfaction. The differences in the ratings for the first job after graduation and current job was considered to represent a change in job satisfaction. Such a change would be related to the total number of jobs held with an increase in age. A detailed account of 'socialization to the work role', and hence changes in attitudes and job satisfaction, have been discussed in Mortimer and Simmons (1978).

The design of the measures of expectations was complicated by the fact that graduates and diplomates were asked to indicate levels hoped for, expected, and tolerated at the time of their graduation. Naturally, with hindsight, the values expressed by this group might be less than would be expected of a person who had just completed a degree or diploma. Some measure of this deviation could be achieved with a comparison between current final year students and the graduates and diplomates for 1976 and 1978. Nonetheless the use of this technique would not be without problems since the available

employment data have indicated a marked deterioration in the employment prospects for graduates and diplomates in the last few years. This apparent instability in employment prospects would be likely to affect the attitudes of current final year students. However, the ratings expressed by the graduates and diplomates (which refer to the time of their first graduation) have to be accepted at face value.

To summarize, the job aspirations and expectations of students, graduates and diplomates and the way in which graduates and diplomates adjusted to the job opportunities available to them (the fourth term of reference) were examined in terms of:

1 job characteristics;
2 values expressed in terms of the level hoped for, level expected and level tolerated for each job goal; and
3 differences in goal levels aspired to and goal levels achieved as a measure of adjustment or accommodation.

A more traditional technique for assessing job expectations is to ask students to indicate what they believe their prospects are of finding employment in their field of training upon completing their course. These expectations can then be compared with employment statistics on the actual time taken for graduates and diplomates to find appropriate employment (information obtained from this study) and on the employment status of graduates and diplomates approximately four months after completing courses (information obtained from annual GCCA statistics). Thus both new and final year students were asked to indicate how they saw their prospects (rated on a four-point scale from very good to hopeless) of finding suitable employment both within four months of completing their course, and between four and eight months of completing their course.

Recruitment

Recruiting strategies used by employers, part of the second term of reference, was a key area of research which was closely related to employment trends for graduates and diplomates.

The topic of recruitment was divided into three parts. They were:

1 recruiting techniques (advertising, selection panels);
2 recruiting style (characteristics sought after, experience); and
3 recuiting difficulties (areas, reasons).

Some indication of the success of different recruiting techniques used by employers would provide valuable information for both students and careers and employment advisers. It was hypothesized that organizations of different types and sizes would use different recruiting techniques. For example, a small engineering firm would probably use contacts made through work experience programs more than contacts made through the Commonwealth Employment Service (CES).

The second part, recruiting style, refers to the characteristics on which employer might rate an applicant in the actual selection process. It reflects the attitudes, expectations and preferences of the employer. Again significant differences might be expected in the characteristics of graduates valued by large companies as contrasted with small companies. Differences in style could also be established between employers of new graduates and employers of middle management non-graduate employees. This aspect is relevant to the comments made previously in the discussion on employment concerning the reasons for employers not employing graduates. Some indications of employer preferences for new and experienced graduates and diplomates would also be relevant.

The list of characteristics used in the rating scale was derived from several sources. However, it included characteristics which defined three types of recruiting style identified by the OECD (1977b). The styles and examples of characteristics were:

1 the basic raw material approach (overall academic attainment in a tertiary course, specific areas of skill);

2 the value added approach (perceived future 'trainability' of an applicant); and

3 the end product approach (immediate 'value' to the organization).

In the past the first two characteristics have tended to describe the employment policies used for the employment of the more educated. The third characteristic has been used for the selection of personnel in lower grade occupations (OECD, 1977b:82).

Recent changes in the economic growth of Australia and subsequent changes in the operation of many organizations, including changes in recruitment levels, are likely to affect their recruiting styles. With a downturn in ecomomic growth, employers are more likely to opt for the 'end product approach' rather than employing people whom they perceive could be trained for higher managerial positions at a later stage. From this it might be expected that employers would become more reluctant to support internal training programs and externally run further education.

Unfortunately these changes could not be determined by this study as it was designed. Instead, an indication of the current (1979) situation was achieved, and some comparisons were possible between employers and non-employers. Future industrial surveys should consider changes in recruiting style which would give some indication of changes in attitudes to 'certification' and some insight into the possible under-employment of graduates. In this way significant moves to the 'basic raw material approach' could be interpreted with respect to job specifications and distribution.

It is generally accepted that there is at present an adequate supply of new graduates and diplomates for most areas of employment. One would not expect employers to have encountered many difficulties in recruiting suitable new graduates or diplomates. A question on this topic was included in the survey of employers since some

indication of manpower shortages in particular areas would assist manpower estimation. The reasons given by employers as to the suitability of graduates and diplomates would be relevant to the design of specific course objectives.

Attitudes

A common element. The second term of reference for the study called for an analysis of 'the views and attitudes of employers concerning the recruitment ... the training they expect graduates and diplomates to have ...' The first part of this term of reference was interpreted as recruiting practices described in terms of recruiting techniques, recruiting style and recruiting difficulties. The second part was seen to be related to the overall objectives of tertiary education courses. In the context of the project this was examined both in terms of the employers' attitudes to general objectives of tertiary education and the type of person the tertiary education sector should produce.

There has been a great deal of controversy and speculation as to whether tertiary level education should meet the specific needs of employers or whether education at this level should also anticipate the future needs of employers and industry as well as concentrating on the personal development of the individual. The provision of vocational education has been clearly accepted as the responsibilities of the technical and further education system in Australia and have been outlined in detail in the Kangan Report (Australian Committee on Technical and Further Education, 1974:45) and the Williams Report (Committee of Inquiry into Education and Training, Volume 1, 1979:283-285). Vocational education is also the responsibility of the advanced education sector, as has been clearly stated in a number of reports. For example, see the Second Report of the Commonwealth Advisory Committee on Advanced Education (1969) and the Third Report of the Australian Commission on Advanced Education (1972).

The third term of reference referred to the attitudes of graduates and diplomates and students towards employment and in this study referred only to those from the advanced education sector. This key research area which incorporates the attitudes of employers towards training (second term of reference), the attitudes of graduates and diplomates (third term of reference), and the notion of educational objectives, involves an analysis of the qualities of graduates and diplomates. Qualities in this sense refer not only to the acquisition of skills but also to other intangible factors such as motivation, the ability to communicate and the ability to work with others.

Students, graduates and diplomates and employers all have ideas as to what tertiary education should achieve. A comparison of the expectations of the different groups might be expected to yield important information on the apparent conflict of opinion that exists between educators and employers and to some extent graduates. For example, Miller (1979) in a recent investigation of the education of engineers in the United Kingdom quoted evidence that the United Kingdom was not experiencing a

quantitative shortage of engineers but a qualitative shortage. He elaborated on this point by saying:

> Why, for example, does the occasional industrialist say in public that engineering undergraduates are unfitted for industry? Why do educators respond by saying that some sections of industry fail to use properly what are in fact good graduates? Clearly generalized arguments, based on impressions, however well informed, do not provide precise enough data on which to base any extensive changes that might be required in engineering education. (Miller 1979:3)

Another example of the mismatch in the goals of different groups is contained in a submission to the Committee of Inquiry Into Education and Training, by Collins and Hughes (1979). They reported that while students, parents and teachers all had very high expectations of the goals of secondary schools, students rated 'practical goals' to be much more important than did teachers. For example, students valued secondary school goals such as having specific skills for a chosen field of work, having help to choose possible jobs, or having knowledge about a wide range of jobs. Teachers were more concerned with goals of personal and social awareness.

The research issues for this part of the project could be summarized by four questions relating to the four different groups under survey.

1 What are the qualities employers are looking for when selecting new graduates and diplomates?

2 How do graduates and diplomates rate the importance of these qualities for success in a job in their field of training?

3 How do current final year students rate the importance of these qualities for likely success in a job in their field of training?

4 How do current first year students rate the importance of the qualities for likely success in a job in their field of training?

It can be argued that if congruence were achieved between these four groups, then students, graduates and diplomates would have an appropriate or adequate understanding of work roles and there would be little substance in the criticism that current tertiary courses were not meeting the needs of employers. Congruence between the attitudes of the four research groups would establish that similar views were held, not that the development of these qualities formed part of the curriculum and was achieved in any way. Any further test of this argument would require an evaluation of the success of educational programs in terms of specified objectives and outcomes.

A mismatch between the groups would yield different information. From the employers' point of view, 'specific skills', 'the ability to supervise junior staff' and 'the ability to make decisions' might be regarded as highly desirable qualities for a graduate. The need for these types of qualities might differ considerably depending on whether the company was large or small, in terms of staff numbers and annual sales figure or budget

allocation. It might be hypothesized that new graduates would hold attitudes inappropriate to the managerial style and requirements of small organizations, which would lead to a higher degree of job mobility for members of this group. Larger organizations would probably be much more flexible in their requirements and recruiting practices. An appreciation of the requirements, attributes or qualities valued by different types of organizations or employers might help new graduates to select an appropriate career direction.

The most important point to be noted is that a common source of comparison (attitudes) between the different groups has been established.

Measures of qualities. The problem remains as to what specific variables should be used as a basis for comparison between the groups. With the wide range of tertiary courses being offered by universities and colleges of advanced education, it is reasonably safe to assume that training in specific skills, as one educational objective, is adequately accounted for. The area of training that attracts the most comment, is that of the personal qualities or characteristics of graduates. A perusal of newspaper advertisements for graduates has revealed an increasing demand for experienced graduates not only with specific skills, but with attributes such as managerial ability or public relations ability or training techniques or the ability to communicate, attributes not normally described in detail in the objectives of basic undergraduate programs.

One could spend some time in generating and discussing a suitable list of qualities or attributes to describe the graduate or diplomate. Miller (1979) used such a list of 25 variables derived from:

> ... the computer search of the literature, interviews with firms and engineering institutions and academics, press statements and bulletins of engineering employers organizations. (Miller, 1979:3)

Undoubtedly there are many variables related to specific occupational groups. In the interests of keeping the questionnaires for this study short, Miller's list was reduced to 14 variables. The list consisted of those variables that were given high (very important) ratings in his study, and which could be used to describe graduates or diplomates from any course and not just engineering, an area with which Miller's study was primarily concerned.

The list of qualities shown in the questionnaires in Appendix II were rated using a four-point scale ranging from very important, to not important. Students, graduates and diplomates were asked to rate each quality with regard to its importance for success in a field of training. Employers were asked to rate both graduates and diplomates with regard to the degree of importance they attached to each quality when selecting new graduates and diplomates.

The development of qualities. Two further types of analysis existed with the investigation of attitudes. The first was to establish whose responsibility it was for the development of these qualities. The second was to establish to what extent the development of these qualities existed as part of the educational objectives of the tertiary education sector and to what extent these objectives were achieved. This also applied to both formal and informal training programs conducted by employers. Only the first type of analysis was considered in the project.

Some of the characteristics or qualities of new graduates described by Miller (1979) would have been listed as course objectives but many would not have the same degree of importance. For example, industrial relations skills are becoming increasingly important within an advancing technological society, but few courses even in the technological subject areas include formal lectures on this topic.

In the questionnaire both employers, graduates and diplomates were asked to state whose responsibility they considered it was for the development of the specific qualities or attributes of new graduates. The list of qualities used was the same as that used to compare the attitudes of all four groups. A five-point rating scale which ranged from a value of 1 (total responsibility of employers) to 5 (total responsibility of universities and colleges) was used.

The extent to which employers had accepted responsibility for the development of the qualities and the way in which employers had achieved these objectives could be regarded as a measure of their commitment to and support for certain educational objectives. As an example, an employer might rate the development of the quality 'ability to supervise junior staff' as being totally his responsibility. For that employer this objective might be best achieved with a new graduate being continually exposed to a situation in which he supervised junior staff and received minimal supervision from senior staff.

These qualities used as 'educational objectives' in this secondary analysis, are not necessarily subject specific but could be regarded as overall tertiary course objectives. Hence the ratings given by graduates and diplomates (having had some post-graduation work experience) could be regarded as a form of evaluation of the transition from education to employment.

Related Issues

The topics included in this section are, generally speaking, an extension of or related to points raised in the discussion of the key areas of research. It does not mean that the issues are any less important by not being included within specific key areas of research which have been described in the research matrix. The matrix was intended to be used as a map to organize research topics and direct the reader to specific areas of interest.

Students. The third term of reference for the study addressed the topic of student attitudes to employment. This has been interpreted in terms of the importance of the qualities needed, from the student's point of view, for success in a field of training. This approach, which has been described previously, provided a basis of comparison among all of the groups surveyed.

A second approach was used to provide additional material relevant to the third term of reference. The basic assumption which underlay the design of the project was that the majority of students enrolled in tertiary studies would have already made some kind of an employment decision as many of the courses offered at colleges of advanced education were by definition, vocationally oriented. To test this hypothesis, students were asked if they had a firm idea of the work they would like to do. In a further refinement of this approach, students were also asked to describe the specific fields in which they would eventually seek employment, by nominating specific employers and/or specific work activities. Answers were rated from 1 to 3. A score of 3 was given if a student nominated a specific employer, for example the State Electricity Commission, Public Works Department, or the Health Commission and the Prince Henry's Hospital and a series of specific work roles (for example, Civil Engineering - specializing in large scale construction of bridges and roads mainly at the supervisor level rather than the design level). A value of 1 was given for responses such as Government and Educational Administration.

It has been suggested that some graduates and diplomates have been reluctant to seek employment outside their sphere of training and have been 'hanging-out' for a suitable job. Another possible explanation would be that students delay entering the workforce by undertaking further study or by extended travel and holidays. To obtain an indication of these trends both final year students and new students were asked to specify (from a checklist provided) their immediate plans upon completion of their course. Final year students were also asked to indicate the number of job enquiries and job applications made up to the time of the survey. No other forms of job seeking strategies were investigated in this study.

In conclusion, ideas of specific work roles and specific jobs, job seeking strategies and future plans are all part of the career decision-making processes of students. But they are not static variables and are likely to change with changes in employment opportunities or job expectations. It was hoped that some of these changes could be examined with the questions included on the 'employment' key area of research and under the topic of 'related issues'.

Employers and non-employers. Employer involvement with and commitment to forms of educational programs and activities have already been mentioned. For purely pragmatic reasons information was sought on the extent to which employers were involved in:

1 the design and implementation of new courses in the tertiary education sector;
2 the evaluation of existing courses in the tertiary education sector; and
3 the design and evaluation of courses for the Department of Technical and Further Education.

This approach provided an opportunity to obtain information on the extent to which employers were involved in educational activities such as course feasibility studies and course advisory committees and to determine the level of representation of employers in these types of activities. This information would be of benefit to both colleges and authorities such as the VIC. Furthermore, it is reasonable to assume that most employers are ignorant of the way in which tertiary courses are designed, implemented and evaluated. Employer involvement in all three phases might help to breakdown existing barriers between the tertiary education sector and employers.

For the non-employer of graduates and diplomates the questionnaire served a useful purpose in identifying a sample, even if small, of organizations sympathetic to the cause of changing the career directions of graduates and diplomates into non-traditional areas of employment.

CHAPTER 3

QUESTIONNAIRE DESIGN

The Student and Graduate, Diplomate Questionnaires

All of the research data for the study was collected using mailed questionnaires. It had been hoped that much of the background information (for example, educational history, age etc.) for students, graduates and diplomates could have been obtained from the confidential student records held by colleges. This task proved too difficult to achieve, firstly because of the time constraints on the project, and secondly because some colleges suggested that major problems could be encountered in obtaining permission to provide access to student records. These major problems generally influenced the style and length of the questionnaire.

It was decided that the student and graduate/diplomate questionnaires should be contained within four pages. This meant that questions on the career objectives of students, graduates and diplomates and specific questions on the job mobility of graduates and diplomates could not be examined. An examination of employment history and expectations does to some extent address this area of research. Furthermore, it is generally accepted that lengthy questionnaires sent through the mail yield a varied and low response rate. This rate varies with both the type of institution surveyed (university, CAE or TAFE college) and the type of student population (attendance pattern and course of study). For example, the response rates for the different groups surveyed are given in Tables A.3, A.4, A.7 and A.8 in Appendix I.

As no information regarding background and educational history was available at the time the survey was undertaken, this meant that the information had to be collected by means of questionnaires. It also meant that no prior information was available on the type and variability of sub-groups within the target population.

To accommodate these problems a general format was used in the design of the questionnaires. For example, those sampled were asked to list their educational and work history details (as described in Chapter 2) rather than answer specific questions which would have lengthened the questionnaire. This approach required the subsequent coding of responses which could not have been foreshadowed when the questionnaires were designed. However, by using the general format some of the questions were not particularly meaningful to some sub-populations. It is not relevant to ask a part-time student who is already employed in a job related to his studies, what he believes his prospects are of finding a job within four or eight months of completing his course. In fact a few respondents commented on this point. However, by obtaining information on the possible structure of sub-populations it was possible at the analysis stage to reject

particular parts of the questionnaire for particular sub-populations. For example, 'educationally experienced' new students or students who had already completed a course and were undertaking a new course were likely to have very different views on employment to those new students who had come direct from the secondary school system.

Economic considerations were important in restricting the questionnaire to four pages. To increase the number of pages to either six or eight would have involved a substantial increase in the costs of printing. The additional weight of paper with the large questionnaire would have increased postage costs by 25 per cent. These points were not so crucial for the design of the employer questionnaires as the sample size was considerably smaller.

The content of the student and graduate/diplomate questionnaires has been summarized in the research matrix shown in Figure 2.1. Specific questions were designed to examine all of the points covered in the matrix which have been described in Chapter 2. The specific question numbers from the individual questionnaires are cross-referenced with the key research areas identified in Chapter 2 and are shown in Appendix III. Copies of the questionnaires are included in Appendix II.

Various types of questions were used. These ranged from simple questions with checklist type answers, to Likert scales and requests for written details of educational and employment history. The measures used have been discussed to some extent in Chapter 2 where the design of the study and the research matrix have been outlined. Further comments on the measures are given with the general discussion of the results of the study.

Employer and Non-Employer Questionnaires

Because of the importance placed by the Project Advisory Committee and the funding authority on obtaining the views of employers, the employer questionnaire was more complex in terms of the type and range of the information sought. Although the student, graduate and diplomate samples were derived from the CAE sector it was not feasible to expect employers to distinguish between college and university graduates and diplomates. Hence the questions seeking the views of employers referred in the main, to the total tertiary education sector.

Most of the questions related to the employment of new graduates and diplomates. A new graduate or diplomate was defined as a person who had no (or very little) work history and who had just completed a course on a full-time, part-time or 'sandwich' pattern of attendance. Some questions were concerned with the employment of experienced graduates and diplomates. At least two years of work experience obtained

after completing a degree or diploma were used as the criterion to distinguish between experienced and new graduates and diplomates.

This simplified approach was based on the premise that there was no evidence to suggest that experienced graduates and diplomates were having difficulties in finding suitable employment. Further investigation of this point was possible as the graduates and diplomates selected for the study also included persons with a substantial employment record.

Knowledge of the relative size of some of the organizations (in terms of, for example, their 1978 intake of graduates and diplomates) enabled a suitable sample to be selected which included the 20 largest employers. An explanation for including a proportion of the largest employers of graduates and diplomates is given in Chapter 4. Initially consideration was given to designing two employer questionnaires. It was proposed to use a complex questionnaire for the larger organizations who presumably, would have available well-organized, readily accessible information that would meet the needs of the questionnaire. A shorter version could then be used with the small employers of graduates and diplomates. This approach proved impracticable as the employer samples were generated from a number of sources and the rate of recruitment of graduates and diplomates was not available from some of the sources.

In addition, a short four page questionnaire was designed for use with non-employers of graduates and diplomates. The main objective of this questionnaire was to establish reasons for organizations not employing graduates and diplomates and to establish if there were possible future areas of employment for graduates and diplomates within these organizations. The non-employer questionnaire included some questions which were similar to the long employer version. For example, questions relating to the characteristics sought after or used as criteria in recruiting by employers and non-employers were similar in both questionnaires.

The basic content of both the employer and non-employer questionnaires has been summarized in Figure 2.1. The specific question numbers are also shown in the appropriate cells in the research matrix in Appendix III.

For the employer questionnaire almost all of the questions were pre-coded. For the non-employer questionnaire no pre-coding was provided so as to keep the appearance of the questionnaire as simple as possible.

Copies of these questionnaires are included in Appendix II.

Field Trials of Questionnaires

The graduate/diplomate questionnaire was field tested on a group of graduate diploma (PG1 level course) students enrolled in a management course at one of the large colleges involved in the study. Discussions were also held with this group of 23 graduates and diplomates. As a result some small changes were made to the questionnaire and the resultant form used in the study.

As the student questionnaires were similar in style and content, no field testing was conducted on these questionnaires.

The main objective of the small pilot study was to clarify definitions, questionnaire style, the coding format and to seek overall impressions from the pilot sample regarding the face validity of the questions. No attempt was made to carry out any analysis of the data collected.

The employer and non-employer questionnaires were not field tested. These questionnaries were subjected to close scrutiny by the Project Advisory Committee and a special committee formed to consider the non-employer questionnaire. This latter committee consisted of members of the Project Advisory Committee and representatives from the three employer organizations. More specific details relating to the conduct and management of the project are given in Chapter 5.

CHAPTER 4

TECHNICAL ASPECTS

General Comments and Summary

A major problem encountered in the design of the project was the size and variability of the populations to be surveyed. Differences in the organization and classification of the courses offered by each of the colleges (a unit of sampling in the study) created problems for the construction of a suitable sampling frame for the student, graduate and diplomate populations. For example, courses which were regarded as applied science by some colleges were classified as engineering in other colleges. Often a particular course came under the control of a single department but many of the individual subjects in that course were provided by several departments within the college. The name of the course or the department was not sufficient information to enable a course to be adequately classified.

Three course classification systems were considered in the construction of suitable sampling frames. They were the International Standard Classification of Education (UNESCO, 1972) the proposed Australian Standard Classification of Education (ABS, 1978) and the proposed Tertiary Education Commission system for Colleges of Advanced Education. Details of the last named system were provided by the VIC.

While the ISCED and the ASCED offered a detailed ordering of tertiary courses, such systems if used in their complete forms would have complicated the construction of the sampling frames. An objective of the study was to investigate areas of study with some reference to a few individual courses rather than deal with all of the courses offered by the colleges. The only viable alternative available was the TEC system which used teaching activities as a basis for the classification of courses. The four major groups of teaching activities were Humanities, Social Sciences, Science and Technology, and Clinical Science. The subgroups (clusters of teaching activities) resembled the fields of study used in the ASCED.

The TEC system was used as a basis for the sampling frames, and was expanded in some fields (that is individual courses investigated) to allow future comparisons to be made with nationally derived educational data. The resultant classification system which was developed (see Table 4.1) for the student, graduate and diplomate populations was also used in parts of the employer questionnaire to assess past and future trends in the employment of graduates and diplomates. The system ensured that all areas of study offered in colleges affiliated with the VIC with the exception of Education, Law, Forestry and Agriculture were represented in the sampling frame.

Table 4.1 Classification of Courses

Area of study (Student, Graduate and Diplomate Populations and Samples)	Area in which qualification of Graduate or Diplomate was Obtained (Employer Questionnaire)	Examples of specific courses
01 Art & Design	Fine & Applied Arts	Graphic Design, Painting, Films, T.V.
02 General Humanities	General Humanities	English, History, Philosophy
03 Social Sciences	Social Sciences	Librarianship, Social Work, Psychology, Journalism
04 Accountancy 05 Other Business & Admin.	Business & Admin.	Accounting, Economics, EDP, Management, Secretarial Studies
06 Chemistry etc. 07 Pharmacy 08 Other Science & Technology	Applied Science & Technology	Chemistry, Biology, Metallurgy, Physical Education
09 Medical Technology 10 Other Paramedical	Paramedical	Speech Pathology, Physiotherapy, Nursing, Radiography
11 Civil/Structural Engineering 12 Mechanical/Production Engineering 13 Other Engineering	Engineering	Civil, Naval, Aeronautical, Surveying, Cartography
14 Built Environment	Built Environment	Architecture, Town Planning, Quantity Surveying, Building
15 Maths & Computer Science	Maths & Computer Science	Computing Science, Statistics, Operations Research

It was planned that at least one specific course from each area of study would be investigated in detail. After a close scrutiny of the course content of all of the courses offered it proved impossible to identify one course in Art and Design, General Humanities or Social Sciences that had a similar course content over all colleges. Therefore the areas of study shown in Table 4.1 not only incorporate nine general areas of study but also include some individual courses.

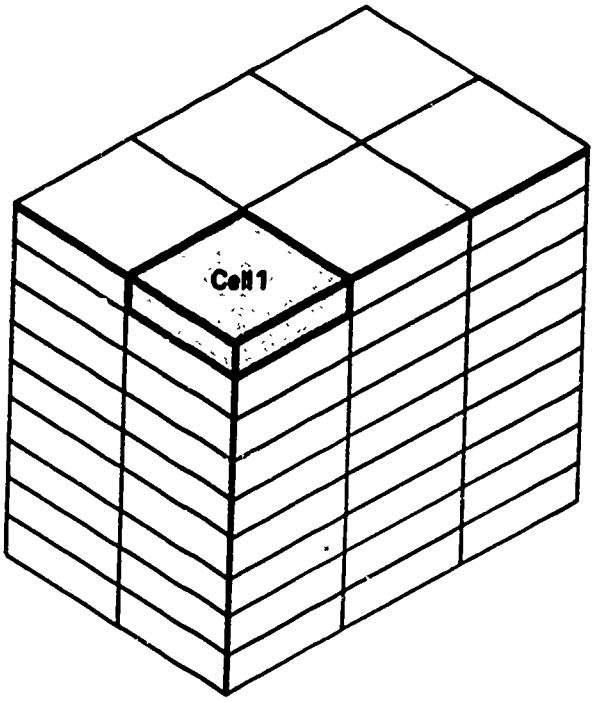
Sampling Design

Once the areas of study had been suitably classified the next step involved the construction of the sampling frames. The variables used to construct the student sampling frames were: (1) area of study (see Table 4.1); (2) college (a total of 13); and (3) level of award (degree or diploma). A separate frame was constructed for each of the two target populations of (1) new students; and (2) final year students enrolled in the colleges in 1979. The relationships between these dimensions of the sampling frame are illustrated diagrammatically in Figure 4.1.

A disproportionate stratified random sampling technique (see Ross, 1978) was used to ensure that all colleges were represented in the final sample and that certain areas of study, containing an adequate number of cases, could be examined in detail. For example, Accountancy was given full field of study status even though it is a subset of the large population of Business and Administration students. A simple random sample design would not have provided for this requirement. The likely low response rate to a mail questionnaire would have yielded too few cases (in Accountancy for example) for analysis if the simple random sample design was used. At least 50 cases per cell is usually regarded as a minimum for most types of analysis.

Disproportionate stratified random sampling procedures were employed for another reason. The stratification of the sample (for example by area of study, college, and level of award as shown in Figure 4.1) with the appropriate weighting of data increases the precision of the estimate of population parameters. The parameters of greatest interest in this study were an estimate of the proportion of graduates and diplomates who found satisfactory employment, and an estimate of the time (in months) taken to find employment.

The likely variable response rates for the different areas of study and levels of award were likely to affect the population estimates. The disproportionate stratified sampling design allowed the variable response rates for the individual cells of the sampling frame to be weighted up or down with respect to the number of cases within each cell in the population. The technique assumes that the non-responses are randomly distributed and do not have specific causes.



Example

Cell 1 = : Art and Design
: Degree Level
: College 1

Separate frames were constructed for: New Students
: Final Year Students
: 1976 Graduates and Diplomates
: 1978 Graduates and Diplomates

Figure 4.1 The Sampling Frame

The technique does have the distinct advantage that because a target population has been identified and described in terms of a number of variables, the data can be grouped in any combination of areas of study as long as the appropriate weights have been applied to the data. More specific details for calculating weights can be found in Ross (1978).

A similar approach was used to construct the 1976 and 1978 graduate and diplomate sampling frames. The variables used to construct these frames were: (1) area of study (as with the student sampling frames); (2) college; (3) level of award (degree or diploma); and (4) year of graduation (1976 or 1978). A disproportionate stratified random sampling technique was used also to generate the survey samples of graduates and diplomates.

A different technique was used to construct the employer sampling frames. The first sample (for known employers of graduates and diplomates of colleges affiliated with the VIC) consisted of 200 organizations selected from an initial list of over 800 organizations and classified according to the Australian Standard Industrial Classification (Commonwealth Bureau of Census and Statistics, 1969). The sample contained the 20 largest employers of VIC graduates and diplomates in 1978. The remaining 180 organizations were selected with a probability proportional to size (determined by the number of organizations within each ASIC group) from the remainder of the list. The initial list of known employers of VIC graduates and diplomates was generated from questionnaire returns for 1978 'Destinations Survey' conducted annually by the VIC colleges on behalf of the Graduate Careers Council of Australia.

The second employer sample consisted of employers who do or do not usually employ any graduates or diplomates. These samples were generated with the assistance of the three employer organizations involved in the study. Since no information was available about the characteristics of the specific companies within this category, a simple random sampling technique was used. No specific sampling frame was constructed.

More detailed descriptions of the various populations and samples are given in the following sections.

The Student Populations and Sampling Technique

Enrolment statistics for new and final year students (using the definitions given in Chapter 2) were obtained from the VIC and each of the 13 participating colleges. These data were used to construct population statistics (see Tables A.1 and A.2) and eventually sampling statistics (see Tables A.3 and A.4) using the sampling frames described above. The response rates for individual colleges have not been presented in this report.

For the student samples some areas of study and levels of award were merged as the required data were not available from the student records of some colleges. For example in the student sample the Humanities and the Social Sciences areas of study were combined and no distinction was made between degree or diploma students. This group is identified as Humanities and Social Sciences, 'common' award, in the sampling frame.

The sample size for each cell (for example area of study 1, college 1 and level of award 1) of the sampling model was set at 90 cases. For cells which contained less than 90 cases, all of the cases were selected. Where two areas or two levels of award were combined the sample size was increased appropriately. The distributions of the student samples drawn for the project are shown in Tables A.3 and A.4.

Lists of names of all students defined as new students and final year students in the study were obtained from the colleges. The names were grouped according to the sampling frame (area of study 1, level of award 1, college 1 followed by college 2 etc.). When the number of cases in a stratum exceeded 90, then a step interval technique was used to select the sample. The step interval is defined as:

$$SI = \frac{N \text{ population size}}{N \text{ sample size}}$$

A random number between 1 and the step interval was selected as the starting point in the sample selection. For example, with a population of 400 new students in area of study 1, college 1 and level of award 1, the calculated step interval would be:

$$SI = \frac{400}{90}$$

$$= 4.44$$

Using a randomly selected starting point of 2, case number 2 is selected as the first case in the sample. The next case is derived by adding the step interval. That is case number 6.44 or realistically case number 6. The third case to be selected is: 6.44 + 4.44 or case number 11. The procedure ensures that all cases within the population have an equal chance of selection in the sample.

Each student selected for the sample was then given an identification code. The code used was a combination of college attended, questionnaire type (new or final year student questionnaire), level of award, area of study and a sequential number to identify individuals within a single cell. This code served as a check on the educational information supplied by the respondent and as means of identifying non-responses to the first mailing. The addressing and mailing techniques used for the sample are discussed in the following chapter under Project Management.

The Graduate and Diplomate Populations and Sampling Technique

For the graduate and diplomate samples, the names of persons who graduated in 1976 or 1978 were obtained from the college graduation brochures. These brochures listed persons who had applied to graduate in 1976 or 1978 and for approximately 95 per cent of the cases, the lists referred to those who had completed their courses of study during the preceding year (1975 or 1977). Thus the graduation lists included a small percentage of persons who had completed their courses of study some years prior to 1975 or 1977. Likewise the lists excluded some persons who had completed their course of study in 1975 or 1977 and who failed to apply to graduate in 1976 or 1978. There was no simple way of overcoming this problem.

These data were used to obtain the population statistics (see Tables A.5 and A.6), the sampling frames and eventually the sampling statistics (see Tables A.7 and A.8).

For the graduate and diplomate samples, a cell size of 100 cases was used. With an anticipated non-response rates of approximately 50 per cent this meant that each cell would contain approximately 50 cases, a number considered sufficient for data analysis purposes.

The step interval technique described earlier and used to select the student samples was used for cells which contained more than 100 cases. Each graduate or diplomate selected for the sample was given a code number. This code number was a combination of college attended, year of graduation, level of award, area of study and a sequential number to identify individuals within a single cell. The code number was used to check response rates, to organize follow-up mailings and to serve as the link between names and addresses.

The Employer and Non-Employer Populations and Sampling Techniques

The population of known employers of VIC graduates and diplomates was generated from questionnaire returns for the 1978 'Destinations Survey' conducted by the VIC colleges on behalf of the GCCA. An analysis of the returns (from nearly all of the VIC colleges) produced a list of names of employers. After considerable cross-referencing of information, the number of graduates and diplomates employed by an individual organization in 1978 was obtained. Information provided by the graduate or diplomate on his or her current job activities (in 1978) yielded data which enabled almost all of the organizations to be classified according to the Australian Standard Industrial Classsification (ASIC).

Admittedly the recruitment rates for different organizations may have varied over the last five years but the data constructed from the GCCA survey returns provided the only logical starting point in identifying the target population of employers of VIC graduates. It is worth noting that many of the organizations within the target population

would also have recruited university graduates. However, it was not feasible to generate two target populations; those employers who did employ VIC graduates and diplomates and those who did not.

The target population of employers could be regarded as a biased population in so far as it involved only known employers of VIC graduates and diplomates. The costs both in time and money to the project would have been considerably increased if individual universities had been approached for their 'Destination Survey' returns to construct a comprehensive target population. The approach used was a compromise between sampling accuracy and project expenditure.

The overall target and effective target population statistics are reproduced in Table A.9. The number of VIC graduates and diplomates employed by the different organizations in 1978 ranged from one to 52. As expected over 95 per cent of the organizations employed less than seven graduates or diplomates many of whom would have been already employed by that organization. The 20 largest employers accounted for approximately 25 per cent of the graduates and diplomates who took out an award in 1978.

Thus for the first employer sample the largest 20 employers were selected with certainty and the remaining 180 employers were selected using a proportional stratified random sampling technique and using the ASIC system as the basis for stratification. This technique ensured that the information gained from the questionnaires not only referred to a substantial proportion of the population of graduates and diplomates but also had a relatively low unit cost to collect the information. A simple random sample of the 800 organizations identified as the overall target population would have under represented the views of the largest employers of graduates and diplomates.

The number of organizations sampled from each stratum varied with the size of the effective target population. All organizations were sampled for strata which contained less than 20 organizations (except stratum L). Some judgment was exercised on the likely response rate for the other strata and the sample size for each strata determined on this basis. The sampling statistics and response rates are shown in Table A.10.

To increase the overall size of the employer sample a second sample of employers (N = 600) was generated from the membership lists of three employer organizations: the Victorian Chamber of Manufactures, the Victorian Employers Federation and the Metal Trades Industry Association of Australia (Victorian Branch). A simple random sample of 200 employers was selected by each of the organizations from their membership files. Some broad guidelines on the sample parameters were provided by ACER. These parameters are listed in Table A.13. Also the questionnaire response rates for the second sample are shown in Table A.11.

Modified Employer Sample

As the response rate for the employer questionnaires were very low (refer to Tables A.10 and A.11) it was not feasible to treat the achieved samples individually and hence make comparisons between the four samples. To overcome this problem the samples were merged (and weighted) in such a way that the sampled members of the three employer organizations were distributed on a proportional basis over the 13 strata used to construct the sample of known employers of VIC graduates and diplomates.

Only 113 responses were received from a total sample of 600 members of the three employer organizations (see Table A.11). Of the 113 responses, 27 were known employers of graduates and diplomates and completed the correct questionnaire, a further 25 stated that they did employ graduates and diplomates but proceeded to complete the wrong questionnaire.

Assuming that these figures represented the proportion of employers and non-employers of graduates and diplomates, then:

$$\frac{27 + 25}{27 + 25 + 61} \quad x \quad 600 \quad = \quad 276$$

or 46 per cent of the total of 600 sampled actually employed graduates and diplomates. To generate a new effective target population (refer to Table A.10) the 276 employers were distributed on a proportional basis over the 13 strata. The new effective target population and combined response rate for each stratum is shown in Table A.12. These data were used to weight the questionnaire responses.

A Note on Weighting Procedures

The frequency counts presented in Appendix I for the population and sampling statistics are 'raw scores'. The response rates quoted are actual response rates. When weighting procedures are used the total sample size remains constant but the frequency counts for individual cells or strata will vary from the raw data. For the majority of the tables presented in the report, the weighted frequency counts are shown as those data represent population estimates and not the frequencies actually achieved with the questionnaires.

With the weighting procedures, fractional frequency counts are produced but only whole numbers are reported. Thus proportions (percentages) reported often vary to a small degree from the number of cases reported. It should be remembered that the proportions or other statistics used are population estimates, whereas the accompanying frequency counts are weighted variables rounded to the nearest whole weighted number.

CHAPTER 5

PROJECT MANAGEMENT

The Advisory Committee

Work commenced on the project in November 1978 and was completed in July 1980. A Project Advisory Committee was set up soon after the commencement of the project and met for the first time on 5, March 1979. The membership of the committee consisted of:

1 two representatives of the Victoria Institute of Colleges;
2 two representatives of the ACER (excluding the Project Director);
3 two representatives from colleges affiliated with the VIC;
4 two representatives from industry; and
5 the Project Director.

The advisory committee met on several occasions during 1979 and twice in 1980 to consider the design of the project, problems encountered with the progress of the project and to provide general guidance for the duration of the project.

One subcommittee was formed to advise on the development of the non-employer questionnaire. This committee consisted of two representatives from the VIC, two from ACER and representatives from the Victorian Chamber of Manufactures, the Victorian Employers Federation and the Metal Trades Industry Association of Australia (Victorian Branch). The subcommittee met formally on only one occasion.

College Visits

The initial contact with the colleges was made through the VIC in late December 1978. Subsequently each college was visited between January and February 1979 and discussions were held on a number of issues associated with the project. The discussion topics included the outline of the objectives of the study, the role of ACER and the VIC in the study, the colleges' involvement with the study (supply of college staff, access to student records, the availability of statistical data) and various ways in which the college could assist with the general progress of the study.

All of the colleges expressed a willingness to participate in the project but raised a number of problems which were likely to hamper the progress of the project. The main problems highlighted were:

1 the availability of statistical data on current enrolments and part course completions to enable suitable sampling frames to be constructed;

2 the availability of college administrative staff to generate lists of names of students, graduates and diplomates to enable the samples to be drawn by either the college or ACER;

3 the availability of college staff to extract the address of each student, graduate and diplomate selected for the survey;

4 the question of confidentiality of student names and addresses;

5 the role of ACER in the distribution (mailing) of questionnaires;

6 the role of ACER and the VIC in the follow up of non-responses;

7 the question of confidentiality of information during the data processing phase from both the students' and the colleges' points of view;

8 the role of the colleges in encouraging students, graduates and diplomates to complete the questionnaire;

9 access to project data (at the completion of the project) by individual colleges; and

10 the role of the VIC in the design, implementation and management of the project.

Some of these points have been discussed in the following pages and details have been given on the steps taken to overcome these problems.

Sampling Frames, Sampling and Mailing Techniques

Students, Graduates and Diplomates

The sampling frames were constructed from enrolment statistics and projected course completion statistics provided by the colleges and the VIC.

The numbers of names on the student lists which were provided by the colleges and which were used in the construction of the sampling frame varied only slightly from the official statistics. These discrepancies were probably caused by students dropping out of courses or from difficulties that college staff might have experienced in interpreting the definitions of new and final year students. Only one college refused to supply names of students. In this case the college student identification number was used in the sampling process. This procedure did not create any difficulties in the construction of the sampling frame and in selecting students to be included in the samples.

The sampling frames for the graduates and diplomates were constructed from the graduation ceremony lists for 1976 and 1978. The numbers on these lists varied to some extent from the numbers who actually completed courses in 1975 and 1977. This problem has been mentioned in Chapter 3.

Almost 9000 new and final year students, graduates and diplomates were sampled. The sampling techniques used have been described in Chapter 4. Once the samples had been selected, the names, each with an identification code, were transferred to computer coding sheets for the production of computerized address labels and computer lists of names and numbers to be used for administrative purposes.

The colleges had agreed to provide an address for each name drawn in the sample. It was at this stage of the project that many of the difficulties outlined earlier were encountered.

For the small colleges only small numbers of students, graduates and diplomates were sampled. These colleges were able to supply the required addresses using their own administrative staff. Understandably the large colleges experienced greater difficulty. For one large college, whose students, graduates and diplomates constituted a significant proportion of the samples, extra staff had to be provided by ACER to carry out the task of obtaining the addresses from the college's records for those drawn in the samples.

Most colleges expressed some concern at providing an external organization (ACER) with the addresses of students, graduates and diplomates. Some colleges preferred to undertake their own mailing of questionnaires. Other colleges were willing to let the VIC conduct the mailing of questionnaires. A few colleges were quite satisfied that the ACER would respect the confidentiality of names and addresses.

To overcome these problems the VIC was used as the overall co-ordinating authority. The confidentiality of the link between names and address was preserved using a 'link file' system. This system operated in the following way. After the colleges had recorded an address for each of the names included in the samples, the computer coding sheets were returned to the VIC who in turn organized the production of computerized adhesive address labels and a computer listing of the code numbers linked to names. This listing was used by ACER to organize the questionnaires to be mailed.

In the next stage of the operation a code number was recorded on each questionnaire. This number matched a name in a sample. After the questionnaire, a covering letter and a pre-paid return envelope to ACER had been placed in an envelope the code number was transferred to the front of the envelope. The completed envelopes were taken to the VIC where the appropriate address labels were placed over the code number. This procedure required the double handling of envelopes and substantially increased the clerical costs for the project. Nevertheless the confidentiality of names and addresses was preserved. Only one college asked that an additional covering letter should be included with the questionnaire.

Follow-up

The filled-in questionnaires were returned to ACER in pre-paid postal envelopes. The respondents' code was then checked off the master list of code numbers and names which did not contain addresses.

A second mailing was conducted approximately three weeks after the initial mailing. A second batch of address labels was produced by the VIC from a reduced master list provided by ACER. The mailing procedures described previously were repeated.

Approximately 60 per cent of the sample were sent a second questionnaire. The second wave of questionnaires raised the response rate to almost 60 per cent for the student samples and around 40 per cent for the graduate and diplomate samples. The response rates are recorded in Tables A.3, A.4, A.7 and A.8.

Because of the laborious procedures involved in the double handling of questionnaires at the envelope addressing stage and for the substantial follow-up of non-respondents no further follow-up mailings were undertaken.

Employers and Non-Employers

For the main (ACER selected) employer sample of 200 organizations the questionnaires were addressed to either the managing director or chief executive officer of the organization. No attempt was made to establish personal or telephone contact with the sampled organizations although a few organizations contacted ACER with problems in answering the questionnaire. A follow-up letter, a second copy of the questionnaire and some results of the other research being conducted at ACER at the time were sent out approximately four weeks after the initial mailing.

Where possible the addresses for the organizations sampled were obtained from local and interstate telephone books. The final reponse rate of 36 per cent was disappointing but not unexpected with a postal survey. A more personal approach to the organizations might have had some effect on the response rate, and on the quality of the responses.

The three employer organizations involved in the project were responsible for the selection of their respective samples and generously undertook their own initial mailing and follow-up of non-respondents. One organization even took the trouble of finding out the name of the managing director of each individual company in their sample and addressing the questionnaire to that person. In some cases the questionnaires were returned to the employer organizations. Other sampled employers returned the completed questionnaire to ACER. A follow-up was conducted by two of the employer organizations but this did not substantially influence the overall response rate.

Coding and Data Processing

The student and graduate/diplomate questionnaires used a combination of pre-coded and open-ended questions. All questionnaires were checked for internal consistency and whether the identification code matched with the educational history given and then coded in the coding column provided on the questionnaire. Data cards were punched directly from the questionnaire.

For the employer questionnaire, 95 per cent of the questions were pre-coded and coding was provided on the questionnaire to enable cards to be punched directly from the questionnaire. This eliminated the lengthy task of post-coding. The questionnaires were checked for internal consistency.

No pre-coding was used in the questionnaire for non-employers. Instead a system of 'check boxes' was used to simplify the appearance of the questionnaire.

All of the analyses were carried out by using the Statistical Package for the Social Sciences (refer to Nie et al., 1975) held at the University of Melbourne.

General Comments

The problems encountered with the actual co-ordination of the project across the 13 colleges mainly in terms of meeting deadlines and establishing systems appropriate to the different administrative practices of the colleges was one of the most difficult tasks of the project. While all of the colleges were extremely co-operative and sympathetic to the problems of research some were unable to provide adequate resources to assist with the project. Unfortunately background data on sampled participants were not readily available from the colleges. This was not only because of their reluctance to make the data available to ACER, but because of their inability to provide staff to assist in assembling this information. As a result all of the research material had to be collected by means of the questionnaire. Thus almost all of the costs had to be borne by the project.

It is worth noting that co-operative research of this nature requires careful forward planning to establish ways in which the colleges and universities can participate in more fully and be responsible for the generation of research data in order to reduce some of the project costs. The GCCA have already done this, in that, in many colleges and universities their 'Destinations Survey' is posted out with graduation ceremony material. It is not suggested that this is the only or most effective technique for distributing questionnaires.

Finally the use of common definitions in the tertiary sector to describe new students, final year students, and part-time students as well as a unified system for classifying courses, and some uniformity in the type of background data obtained at the course enrolment stage would be invaluable in the study of student programs through courses and on into the workforce. These questions will be of greater importance in the future if increasing numbers of graduates and diplomates are not able to find suitable employment.

PART TWO: RESULTS AND D'SCUSSION

CHAPTER 6

GENERAL DESCRIPTION OF THE SAMPLES

Introduction

This chapter represents the first stage of the presentation and discussion of the results of the survey. The chapter covers a broad discussion of the background informatior obtained from the questionnaires. Such aspects as the distribution by age, sex, school background and educational history and a description of the characteristics of some of the sub-groups within the student, graduate and diplomate samples are reported and discussed. A broad description of the size and nature of the operations and workforce of the the employer sample is also given. In addition, attention is drawn to some of the peripheral data, such as 'course mobility' and 'wastage', which have been derived from the questionnaires.

Students, Graduates and Diplomates

College, Level of Award and Area of Study

All three of these variables were used firstly to classify the target populations and secondly to facilitate the sample design, sample selection and weighting of the achieved survey data. The numbers drawn in the samples across these different categories are shown in Tables A.1 to A.8.

These data were not analysed on a college basis. It was not an objective of the study to make comparisons between colleges, and for some colleges the number of cases would have been too small for an effective analysis.

The majority of the results reported are based on comparisons of groups using level of award (degree and diploma) and area of study. For some colleges the degree and diploma students are grouped into a 'common' level of award because no distinction is made between degree and diploma students in the early stages of some courses. In other cases graduates and diplomates are grouped together to simplify the analysis and the interpretation of data.

Area of study, which included a few individual courses, remained the main basis for the classification of the data.

Table 6.1 Distribution of Age of Students, Graduates and Diplomates in All Courses

Age and age range (years)	Students		Graduates and Diplomates	
	New %	Final %	1978 %	1976 %
17	a	-	-	-
18	24	-	-	-
19	28	-	-	-
20	12	11	-	-
21	4	21	a	-
22	2	17	10	-
23	2	9	22	1
24	3	6	16	14
25	2	5	7	15
26	3	4	6	15
27	2	3	3	10
28	3	4	5	7
29	1	2	5	8
30 - 39	10	13	19	23
40 and over	4	5	7	7
Under 23	70	49	10	-
23 - 29	16	33	64	70
30 - 39	10	13	19	23
40 and over	4	5	7	7
Total %	100	100	100	100
Total N	1255	1340	993	768

a Less than 1 per cent.

Age

The distribution by age of the respondents for the different samples is reported in Table 6.1. The proportion of new students under 23 years of age is 70 per cent and is higher than the proportions of the first year students reported in official statistics (see TEC, 1978:31). Possible explanations for this include a higher response rate from the younger group of students, the higher response rate from full-time students, and that the definition used for new students excluded students repeating the same course. This bias in the age distribution of new students might have some effect on the information recorded in subsequent sections of this report.

Sex

The increase over the last few years of female enrolments in the CAE sector is reflected in the survey results. The female participation rate in first year courses has increased from 23 per cent around 1972 and 1973 (first year stages of the 1976 graduate and diplomate samples) to 46 per cent in 1979 (see Table 6.2). That is the ratio of males to females has decreased from 3.4 to 1.2 over this period of time. This trend is supported

Table 6.2 Distribution of Sex of Students, Graduates and Diplomates in All Courses

Sex	Students		Graduates and Diplomates	
	New %	Final %	1978 %	1976 %
Male	54	66	69	77
Female	46	34	31	23
Total %	100	100	100	100
Total N	1276	1350	1007	775

by data quoted by Keeves and Reed (1974). They have reported that the ratios have changed from 4.9 in 1968 to an estimated 3.7 in 1973. However, their data referred to total enrolment in Victorian CAE's rather than first year enrolments.

Areas of study in which female enrolments were predominant and where many difficulties in employment have been experienced are Art and Design and Humanities. Thus it would be reasonable to assume that the response rates for the questionnaires had been influenced by the sex of the student, graduate or diplomate and the employment prospects within a specific area. It is worth noting that the unweighted survey results produced the following proportions for the new student sample:

60 per cent male
40 per cent female

The weighting of the data to take into account the particularly low response rate in some areas has effected the ratio of males and females in the sample, as reported in Table 6.2, quite substantially. It can be seen that the proportion of females in the new student sample has been increased from 40 per cent in the unweighted sample to 46 per cent in the weighted sample.

Secondary School Education

In Table 6.3 the results obtained from the survey on the type of secondary school education of the respondents are recorded. These results indicate a relatively stable pattern for the type of secondary school attended by students, graduate and diplomates especially if earlier comments made on the distribution of age and sex are taken into account. There has been a small increase in the proportion of respondents who indicated that they last attended some 'other' type of secondary school. Those members of the samples in this group, in the main, attended overseas secondary schools, although it is possible that a few respondents did not distinguish between Australian and overseas schools and checked an appropriate answer irrespective of the country of origin.

Table 6.3 Distribution of Type of Secondary School Last Attended of Students, Graduates and Diplomates in All Courses

Type of secondary school last attended	Students		Graduates and Diplomates	
	New %	Final %	1978 %	1976 %
Government High School	49	49	51	50
Government Technical School	14	15	16	19
Independent Catholic School	17	15	16	13
Independent Non-Catholic School	16	18	15	16
Other	4	3	2	2
Total %	100	100	100	100
Total N	1273	1343	1008	782

Transition to Post-Secondary Education

The data obtained from the questions on educational history and work history were used to examine the process of the transition from secondary scho to further study. Further study was defined as any course offered by the TAFE, CAE or university sectors or commercial colleges. From Table 6.4 it can be seen that the proportion of students going directly from school to further study has been decreasing over the last few years. Conversely the proportion of students who have undertaken periods of work of greater than three months between secondary schooling and starting on their first course has been increasing over the past eight years. The proportion of students in the VIC colleges who undertook matriculation studies after leaving secondary school would appear to have stabilized since about 1974 which was the approximate year in which the 1978 group of graduates and diplomates commenced their courses.

It is worth noting that of those students, graduates and diplomates who went straight from secondary school to further studies 48 per cent of new students, 42 per cent of final year students, 13 per cent of the 1978 graduates and diplomates, and 13 per cent of the 1976 graduates and diplomates reported that they had had up to three months of work experience prior to undertaking further studies. A further discussion on work experience is presented in Chapter 7.

Educational History

The educational history of students, graduates and diplomates was used to (1) identify sub-populations; (2) trace the educational progress (number of course completions, discontinuations); and (3) trace educational mobility (changes from one level of study to another level of study).

It will be recalled that the respondents were asked to provide details of all courses undertaken after having completed secondary school. The following data were derived from this information:

Table 6.4 The Transition from Secondary School to Post-Secondary Study

Type of transition	Students		Graduates and Diplomates	
	New %	Final %	1978 %	1976 %
Went straight from school to first course	70	77	75	85
Did matriculation between school and first course	7	6	7	3
Worked between school and first course (for more than 3 months)	23	17	18	12
Total %	100	100	100	100
Total N	1251	1300	957	708

1 course sequence number (1, 2, 3);

2 institution type (for example VIC college, university, TAFE college);

3 field of study (as used in this study plus others, for example, agricultural science);

4 level of award (degree, diploma, postgraduate diploma, certificate);

5 attendance pattern (full-time, part-time, sandwich);

6 course status (course completed or discontinued, currently enrolled);

7 time (year course completed or enrolled in, months to discontinuation).

The flow diagrams illustrated in Figures 6.1 and 6.2 provide amplification of points 1 and 2 above.

Students. From Figure 6.1 it can be seen that the majority of the students sampled (on average 70 per cent) were made up of persons who had enrolled in their first further education course at a college affiliated with the VIC. For the purposes of this study these sub-groups (for both new and final year students) are referred to as educationally inexperienced students. There was a significant proportion of students who had completed or discontinued some type of course at the post-secondary level. Those students who had discontinued their first course of study but who had enrolled in another course at the time of this study were categorized as relatively inexperienced students. Those who had completed at least one course of study at the post-secondary level were categorized as educationally experienced students.

The proportions of new and final year students who discontinued their first course were similar (14 per cent and 18 per cent respectively). The proportions of new and final year students who had completed their first post-secondary school course were also similar to one another but slightly lower than the proportions discontinuing a first course (13 per cent and 15 per cent respectively). However, these results do not provide an adequate insight to the educational mobility of the students. Course 1 in Figure 6.1 (and

6.3) refers to any course at the post-secondary level. When the levels of award achieved for those who actually completed a first award are cross-tabulated with the level of award currently enrolled in, then more meaningful information on educational mobility is achieved. This information for final year students is shown in Table 6.5 as an example.

It can be seen that the majority of these final year students (64 per cent) of those who had completed a first award had progressed to a degree level award in their second course. The largest shift was from diploma level in a first course to degree level in a second course. For those students who had completed a certificate, roughly equal proportions were currently enrolled in a degree or a diploma at the time of this study.

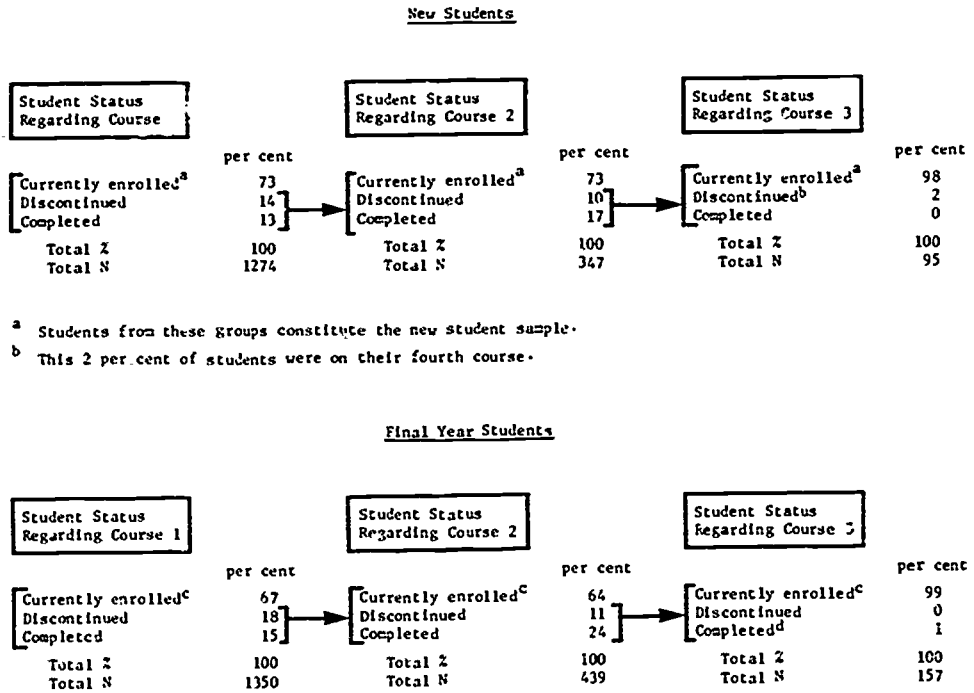


Figure 6.1 The Educational Progress of Students

Table 6.5 The Educational Mobility of Final Year Students who had Completed a First Course of Post-Secondary Study and who were Enrolled in a Second Course

Award achieved in Course 1	Award currently enrolled in (Course 2)		
	Degree %	Diploma %	Total N
Degree	61	39	11
Diploma	85	15	49
Associate Diploma	52	48	9
Certificate	48	52	38
Other award	14	86	5
Average %	64	36	
Total N	72	40	112[a]

[a] Some data were missing for an additional 12 cases and these cases have been excluded from the table.

Table 6.5 refers to 112 cases for whom complete data were available and who had completed their first course and who were currently enrolled in a degree or diploma in the final year of a second course. However, the destination of the original group of 198 final year students who had completed Course 1 in post-secondary education (15 per cent of the sample as shown in Figure 6.1 for final year students) is shown diagramatically in Figure 6.2.

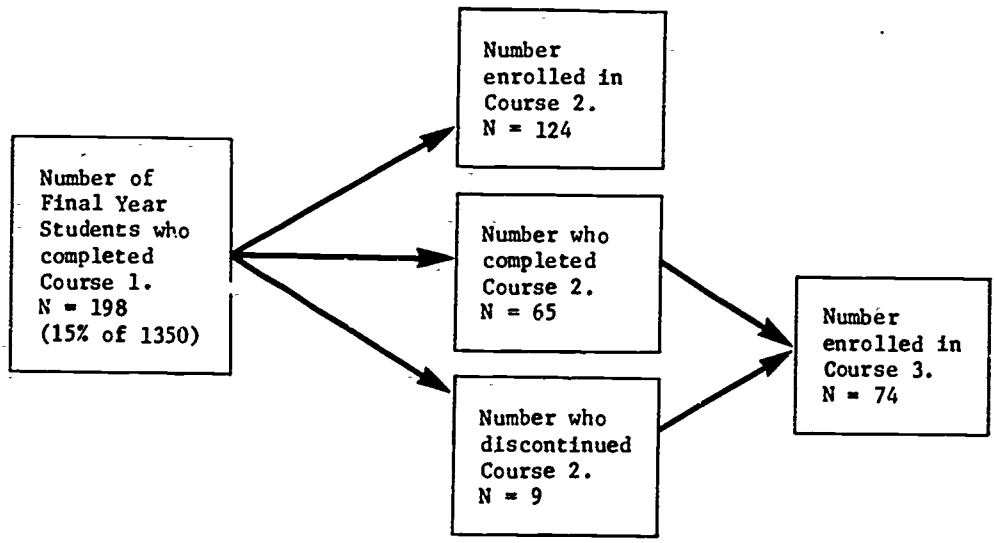


Figure 6.2 The Educational Mobility of a Group of Final Year Students

Table 6.6 Stability in the Educational Mobility of Final Year Students

Area of study in which first course was completed	Enrolment in a second course in the same area as the first course completed	
	%	N
Art & Design	65	7
General Humanities	26	5
Social Sciences	78	7
Accountancy	58	10
Business & Admin.	35	26
Chemistry	83	5
Pharmacy	0	1
Other Applied Science & Technology	41	4
Medical Technology	0	1
Other Paramedical	70	3
Civil/Structural Engineering	44	6
Mechanical/Production Engineering	88	6
Other Engineering	76	15
Built Environment	89	7
Maths & Computer Science	59	1
Other	-	20
Total N		124

Note: The frequencies shown are weighted values and the actual number achieved would vary from these figures to some extent. Even so the relatively small numbers in each area of study do not allow firm trends to be established.

It would be possible to extend Figure 6.2 to examine those final year students who had completed their second course (N = 65 in Figure 6.2) and to make some comparisons between the educational mobility of this group and that of the first year (or new) students. In this instance the low number of cases in each course, which are available for analysis, would render further analyses spurious.

Educational mobility could also be described in terms of changes from one area of study to another as well as changes in the level of study described in Table 6.5. Again using those final year students who had completed one course in post-secondary education, the changes in the area of study from the first course which had been completed to the second course in which the students were enrolled are documented in Table 6.6.

The number of cases for most areas of study (for example Maths and Computer Science) were very small and thus no trends could be established. The only areas of study with a reasonable number of cases (greater than 15) were Business and Administration and 'Other' Engineering. The majority of students who had completed a course in the Business and Administration area and who had progressed to and enrolled in Accountancy are not shown in Table 6.6. This might account for the relatively low proportion (35 per cent) shown as remaining within the Business and Administration

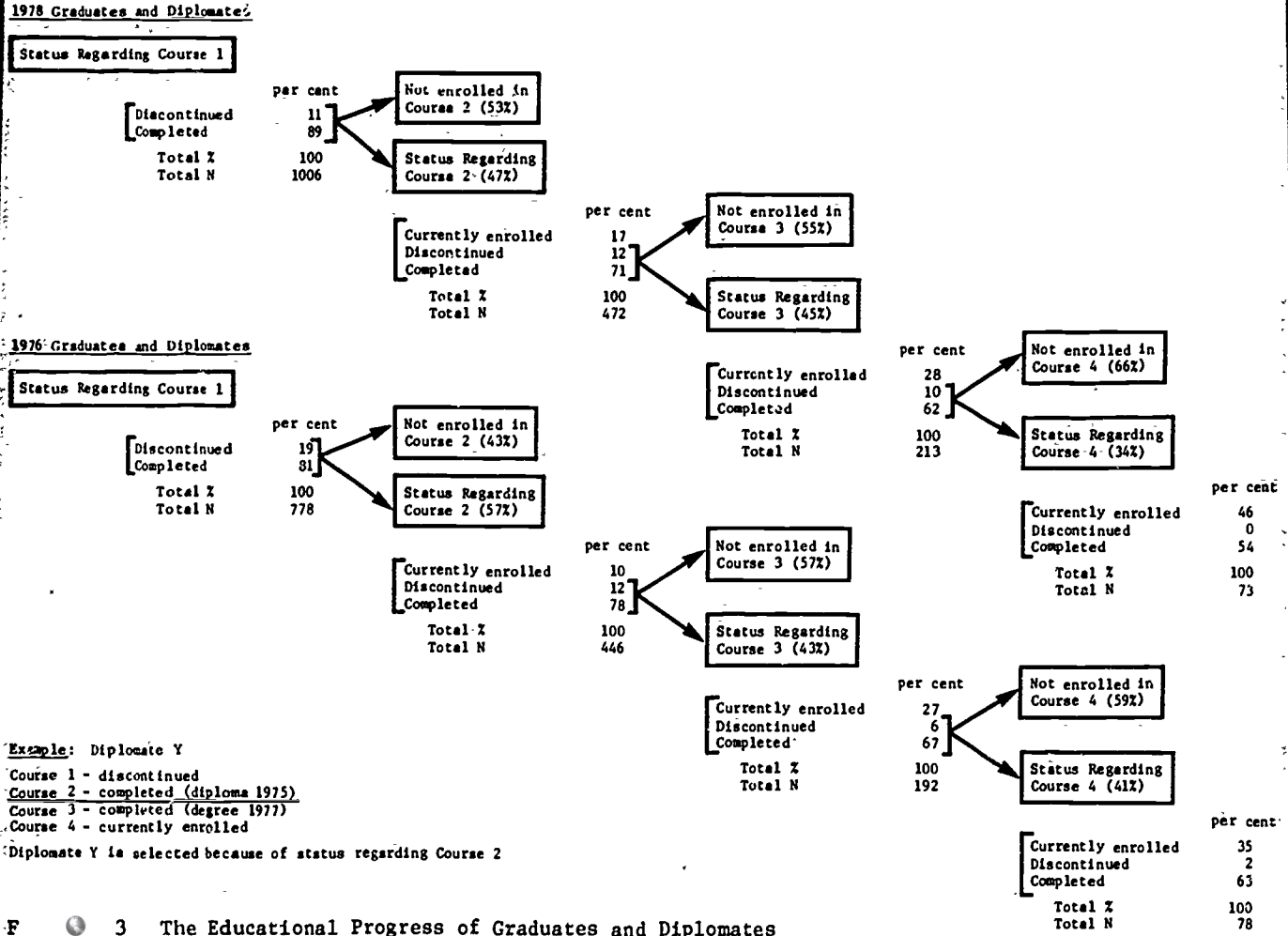
area. If the areas of Accountancy and Business and Administration were merged then a higher proportion (representing increased stability) would most likely be achieved. It should also be noted that all levels of award have been considered in identifying the area in which a first course was completed and the second course enrolled in. Thus some students might have completed a certificate in Chemistry and then enrolled in a Business Studies degree course. In this example there is a change in the area of study as well as a change in the level of award, hence educational mobility. However such a change might have been a natural progression within a particular program of training and not a conscious decision by the individual to change to another field of training or study. The interpretation of data of the type shown in Tables 6.5 and 6.6 could provide some insight into this process, provided the number of cases in individual cells were sufficiently large to provide a stable picture. It could also provide further information on the processes of certification, an area of research which has been given careful study by the OECD (1977b).

Graduates and diplomates. The educational histories of graduates and diplomates were treated in a similar manner to that of the student samples. The status of course category 'currently enrolled' identified those students who were selected in the samples (see Figure 6.1). But for the graduates and diplomates the status of course category 'completed' identified in general terms those graduates and diplomates who were sampled. The term 'completed' as used in the design of the sampling frames referred to a degree or diploma awarded in 1976 or 1978. When the total educational history of graduates and diplomates is analyzed, the term 'completed' used with respect to a course refers to the completion of any post-secondary course. The total educational progress of the 1976 and 1978 samples of graduates and diplomates is presented in Figure 6.3.

Approximately half of the total number of cases in the samples were made up of graduates and diplomates who had completed only one post-secondary course with a degree or diploma awarded 1976 or 1978. This criterion defined the educationally inexperienced group of graduates and diplomates. Comparisons of 'expectations' in Chapter 8 and 'attitudes' in Chapter 10 were made between the educationally inexperienced groups of new and final year students, and the educationally inexperienced graduates and diplomates, and not the total groups which were sampled.

Figure 6.3, which illustrates the educational progress of the graduates and diplomates, was limited to an analysis of four courses. In fact, 27 graduates and diplomates had completed more than four post-secondary courses. The majority of these cases were from the 1976 group.

Direct comparisons between the two samples of graduates and diplomates with respect to educational progression and educational mobility is not entirely valid because the more recent graduates and diplomates (the 1978 sample) would have had less opportunity to undertake additional courses than would the graduates and diplomates



Example: Diplomate Y

Course 1 - discontinued
Course 2 - completed (diploma 1975)
Course 3 - completed (degree 1977)
Course 4 - currently enrolled

Diplomate Y is selected because of status regarding Course 2

Table 6.7 Level of Award for a First Course Undertaken: 1976 Graduates and Diplomates

Award (or equivalent)	Level of award for a first course undertaken %	First award completed %	First award discontinued %
Masters degree (PG2)	a	a	-
Degree (UG1)	29	24	64
Diploma (UG2)	61	63	36
Associate diploma (UG3)	1	2	-
Certificate	9	11	-
Other	a	a	-
Total %	100	100	100
Total N	714	630	84

a Less than 1 per cent.

Note: The total number of cases for this table (714) is at variance with the total numbers (778) given in the first cell in Figure 6.3. In some cases the level of the award could not be ascertained, since the respondent had only recorded the course had been completed or discontinued. Since no discontinuations have been recorded for the lower level awards, it would be reasonable to assume that these missing data apply to courses at these levels.

from the 1976 sample. However the pooling of data from both samples and the use of time intervals as bench marks would enable some trends to be established over a longer period of time.

Nevertheless some direct comparisons can be made between the samples with respect to the status regarding Course 1 in the model shown in Figure 6.3. A significantly higher proportion of the 1976 sample than the 1978 sample discontinued a first course of study. In general the proportion discontinuing has diminished as the number of courses undertaken have increased. This would suggest a stabilizing of both educational and career objectives with an increase in the number of courses an individual becomes involved with. Secondly for both the 1976 and 1978 groups the respondents from degree level courses were more likely to discontinue a first course than those from lower level courses (for example, see Table 6.7 for the 1976 data). Although the data have not been presented in this report this pattern was not exhibited in subsequent courses attempted by graduates and diplomates.

To illustrate the educational mobility of graduates and diplomates, the 1976 group of graduates and diplomates was examined in some detail. The majority of the first awards completed by the group were undergraduate diplomas (63 per cent, see Table 6.7). Those who had completed a first course and had progressed to and completed a second course usually did so at a level of award immediately above the first course. The information related to this question for the 1976 sample is recorded in Table 6.8. Information is also provided for the 1978 sample.

Table 6.8 The Educational Mobility of 1976 and 1978 Graduates and Diplomates who Completed a First and Second Course

Award achieved in Course 1	Award achieved in Course 2: 1976 Sample					Total N
	Degree %	Diploma %	Cert. %	Grad.Dip. %	Other %	
Degree	4	12	4	68	12	41
Diploma	45	10	8	36	1	107
Certificate	14	58	18	2	8	64
Other	20	60	-	10	10	10
Average %	27	26	10	31	6	
Total N	61	59	22	69	12	222
	Award achieved in Course 2: 1978 Sample				N	Total
Degree	5	17	6	66	6	57
Diploma	48	20	8	20	4	121
Certificate	22	52	23	3	-	103
Other	-	86	14	-	-	7
Average %	28	33	13	23	3	
Total N	82	94	37	66	9	288

The only real exception to this trend for the 1976 sample was that 36 per cent of those who had completed an undergraduate diploma in their first course had progressed to and completed a second course at the postgraduate diploma level. Mostly one or other of these awards had been obtained in the field of education.

As with the final year student group considered in the previous section, substantial proportions of graduates and diplomates were educationally mobile and changed from one field of study to another. The data presented in Table 6.9 relating to the educational mobility of the 1976 graduates and diplomates can be a little misleading in that some students progressed to a second field of study closely related to their first. For example, 64 per cent of those who had completed a course in the Business and Administration area progressed to the Accountancy field while 10 per cent (shown in Table 6.9) stayed in the Business and Administration field. A comparison of the data of the type illustrated in Tables 6.6 and 6.9 would provide additional information on the likely effect of reduced employment opportunities for particular areas. It could also reflect the demand for a higher degree of specialization and upgrading of the skills achieved in a first course of study.

Detailed analyses of changes in levels of award and area of study beyond the stage of the second course completed are difficult because of the small number of cases involved.

Table 6.9 Stability in the Educational Mobility of 1976 Graduates and Diplomates

Area of study in which first course was completed	Enrolment in a second in the same area as the first course completed	
	%	N
Art & Design	6	12
General Humanities	17	10
Social Sciences	50	17
Accountancy	49	26
Business & Admin.	10	10
Chemistry	47	18
Pharmacy	50	2
Other Applied Science & Technology	67	15
Medical Technology	50	2
Other Paramedical	76	16
Civil/Structural Engineering	64	14
Mechanical/Production Engineering	53	15
Other Engineering	57	28
Built Environment	100	5
Maths & Computer Science	49	4
Other	-	33
Total N		227

Note: The frequencies shown are weighted values and the actual number achieved would vary from these figures to some extent. Even so the relatively small numbers in each area of study do not allow firm trends to be established.

Comments

The previous analyses have served to illustrate the complexities facing researchers in the area of mobility from education to work and a career. The general upward trend towards degree and higher level studies, a trend observed by many educational authorities, has as a second complication been concerned with a change in the area of study. Past research has mainly concentrated on reasons for a person undertaking a first course of study. Future research should not only concentrate on the reasons given by individuals for undertaking a second course and for change in an area of study, but also on whether the relative educational mobility is changing over time. Data of this type would provide some insight to the origins of 'credentialism' in the work environment. It would be important to consider whether the proliferation of educational courses at the tertiary level could be seen as a reaction to pressures from employers and the labour market for training in specific job skills, whether the courses themselves represent a more general concern by society for the development of standards (OECD, 1977b:9), or whether at a time of greater unemployment and possibly limited career opportunities additional qualifications are sought by students in the belief that they will obtain more financially rewarding positions.

Table 6.10 Sampled Employers and Non-Employers Classified According to the GCCA System

GCCA classification	Employers %	Employers[a,b] %	Non-employers[b] %
Australian Public Service	1	-	-
Australian Semi-Gov. Authority	1	-	-
Defence Services	-	-	-
State Public Service	4	-	-
State Semi-Gov. Authority	21	-	-
Local Government	9	-	-
Private Professional Practice	12	-	-
Private Industry & Commerce	51	100	100
Education (Non-teaching)	1	-	-
Total %	100	100	100
Total N	98	25	61

a These employers completed the wrong questionnaire i.e. completed the 'non-employer' questionnaire. They were not included in the statistical analysis.

b All of the respondents in these groups were from the samples selected by the three employer organizations. No non-employers were sampled by ACER.

Employers and Non-Employers of Graduates and Diplomates

Classification

Two classification systems were used to provide a basic understanding of the structure of the employer and non-employer samples. They were the Australian Standard Industrial Classification (ASIC) and the Graduate Careers Council of Australia (GCCA) employer classification system. The latter classification is in effect an expansion of the private/public sector dicotomy. Information on the types of employers who were sampled, and classified according to the GCCA system, is shown in Table 6.10.

Just over half (51 per cent) of the organizations who employed graduates and diplomates were in the private industry and commerce sector. A further 12 per cent of employers were classified as being in private professional practice and 21 per cent were state semi-government authorities. All of the employers who were sampled by the employer organizations were in the private industry and commerce sector.

In Table 6.11 information of the classification of employers and non-employers, classified according to the ASIC system, is recorded.

The majority of these employers were from the Manufacturing and Finance and Business Services areas. The areas of Public Administration and Community Services account for the majority of employers in the public sector.

Table 6.11 Sampled Employers and Non-Employers Classified According to the ASIC System

ASIC classification	Employers %	Employers (incorrect questionnaire completed) %	Non-employers %
A Agriculture, Forestry etc.	1	-	-
B Mining	1	-	-
C Manufacturing	30	64	62
D Electricity, Gas, Water	0	-	-
E Construction	3	4	7
F Wholesale & Retail Trade	7	16	16
G Transport & Storage	-	-	2
H Communication	1	-	-
I Finance etc. & Business Services	21	12	13
J Public Administration	15	-	-
K Community Services	19	-	-
L Entertainment, Recreation etc.	2	4	-
Total %	100	100	100
Total N	98	25	61

Although the majority of the employers who were sampled were from the private sector, the number of graduates and diplomates employed per organization (at least for 1978) would appear to be much lower for private industry than for government organizations (see Table A.9). Data published by the GCCA (1979) also indicate that roughly equal proportions of first degree or diploma graduates from both the University and college sectors find employment in the government (non-teaching) and private sectors. From the GCCA survey data recorded in Table A.9, it can be seen that the largest proportion of persons who were awarded a degree or diploma in 1978 (not necessarily a first degree) were employed in the Community Services area (private sector). Data published by the Australian Bureau of Statistics (1979) support this finding. Substantial proportions were also employed in the Public Administration and Defence, and Manufacturing areas.

As expected all of the non-employers of graduates and diplomates were from the private sector with a substantial proportion (62 per cent, see Table 6.11) of the respondents located in the area of manufacturing. The sampling technique used in the project, and detailed in Chapter 4, dictated the distribution of organizations within the ASIC system in that the employer organizations mainly represent employers from the private sector rather than employers from the public sector.

Table 6.12 Changes in the Sales or Budget Allocation and Workforce of Employers and Non-Employers for the Financial Years July 1976 to June 1979

	Significantly increased %	Increased %	Remained constant %	Decreased %	Significantly Decreased %
Sales or budget allocation					
Employers (N = 97)	27	56	12	5	-
Non-employers (N = 61)	26	44	20	10	-
Workforce					
Employers (N = 98)	11	42	27	14	6
Non-employers (N = 60)	7	35	35	22	1

Size

With respect to the actual size of the sampled organizations 32 per cent of the employers had an annual sales figure or budget allocation within the $5 million to $20 million range. Twenty-three per cent had a workforce of between 201 and 500 employees. Almost 17 per cent had a dollar turnover in excess of $100 million and just over 4 per cent had a workforce greater than 5000 persons. The non-employers were more likely to have an annual sales figure of less than $5 million and a workforce of less than 50 persons. A detailed breakdown of these data is shown in Tables A.14 and A.15.

Surprisingly, 7 per cent of the non-employer group had a workforce is excess of 500 persons. However, organizations within this group were likely to have employed graduates or diplomates on a part-time or consulting basis and not on a full-time basis.

Although no indication of the size of the organizations with respect to the type of industry has been given, the evidence presented supports the general belief that the size of an organization is an important factor in determining whether or not graduates or diplomates are employed. Brown (1978) has noted that in the United Kingdom in 1972, for example, approximately 94 per cent of the organizations within the manufacturing area employed less than 200 persons and employed only half their 'share' of the qualified scientists and engineers employed in the total manufacturing sector.

The patterns of increase in the dollar turnover for both employers and non-employers over the three financial years prior to the survey were similar. As shown in Table 6.12, approximately 27 per cent of all organizations reported a significant increase in their sales figure or budget allocations. While the size of the workforce has increased for many organizations (both employer and non-employers) the change has not been as marked as with the sales figure or budget allocation. One of the effects of inflation has been to increase the sales figure or budget allocation, and at the same time attempt to limit the growth in the number of persons employed.

Table 6.13 Distribution of Educational Qualifications of Employees for Employer Organizations (N = 96)

Highest educational qualification held by employee	Proportion of organizations with employees holding educational qualifications					
	Percentage of total number of employees					
	0	1-5	6-10	11-25	26-50	Above 50
Postgraduate qualification	42	48	4	5	1	-
Bachelor degree	10	52	14	12	10	2
Undergraduate diploma	15	54	20	10	1	-
Associate diploma or certificate	23	42	14	11	9	1
Professional association qualification	33	57	2	7	1	-
No formal tertiary qualification	2	-	1	5	13	79
Other	98	2	-	-	-	-

The strongest overall growth has been for the organizations that employed graduates and diplomates. It might be inferred that this growth could have resulted in an increased demand for graduates and diplomates over the last three years. However, no direct information was obtained to provide a possible explanation for these changes. Answers to specific questions on employer patterns of recruitment of new graduates and diplomates over the last five years (Question 5 in the Employer Questionnaire) would appear to indicate that only a few areas (fields of study) have been subjected to an increased demand. The increased rate of recruitment has been for graduates from the areas of Business and Administration, Paramedical, and Maths and Computer Science and for diplomates from Business and Administration and Maths and Computer Science (see Table 7.8).

A more detailed discussion of the changes in specific areas follows in Chapter 7.

Educational Qualifications of Employees

A description of the range of educational qualifications held by employees and the proportion of specific qualifications held with respect to the total workforce of the employer organizations sampled is given in Table 6.13. It can be seen that almost 42 per cent of the organizations sampled had no employees with a postgraduate qualification (PhD, Masters Degree, Graduate Diploma). For those organizations that did have employees with postgraduate qualifications the proportion was between one and five per cent of their total workforce. Few organizations had greater than 10 per cent of their staff holding a postgraduate qualification. It is surprising that 10 per cent of the employers reported that none of their staff held a bachelors degree and that almost 15 per cent reported that none of their staff held an undergraduate diploma.

The organizations were selected on the basis that they were known employers of graduates and diplomates. Possible explanations for the absence of personnel in these categories are that the educational status of some employees might have changed between the time of the GCCA survey in 1978, information from which was used to construct the sample, and the current survey which was conducted in late 1979. Alternatively the turnover of employees (graduates and diplomates) might have left some organizations with no personnel holding the educational qualification categories of degree or diploma.

Generally speaking the concentration of each educational qualification was between one and five per cent of the total number of employees, for approximately half of the employer organizations sampled.

The only other category to display a significant result was the 'no formal tertiary qualifications' group for employees; for 79 per cent of the sample, at least 50 per cent of the employees had no formal tertiary qualifications.

Another method of assessing the concentration of educational qualifications within the organizations sampled would have been to calculate for example, the number of postgraduate qualified persons per 100 employers for particular ASIC division or the total sample. This technique would require the collection of precise data in the form of absolute numbers and would have required the complete co-operation of the organizations surveyed in the completion of the questionnaires. Data of this type are available in the form of labour force statistics produced by the Australian Bureau of Statistics (1979). However, these data provide information on the numbers in the broad categories of qualified or unqualified persons to the total number employed on particular ASIC divisions. They do not take into account the number of employers involved or the distribution of the number of qualified persons within an organization.

Conclusions

The previous notes provide some understanding of the type of organizations surveyed, the size of the organizations and some of the changes that have occurred during the last few years. While a large proportion of the discussion and data analyses refer to the total employer and non-employer samples (and hence populations) it should not be forgotten that the organizations themselves are quite diverse in their type of operation, managerial style, size, and in some cases, their locality. Hence, overall opinions expressed on such matters as the 'qualities of graduates and diplomates', the recruiting style or future plans to employ graduates or diplomates fail to take into account the individuality of the organization or part of the organization.

The low response rates achieved with the employer and non-employer questionnaires prevented the creation of subcategories to examine specific issues. These issues would have included, for example, the future demand for graduates and diplomates related to the type of industry, changes in the past patterns of recruitment related to past changes in the dollar turnover and workforce, and type of industry related to both the difficulties experienced in the recruitment of suitable graduates and diplomates and specific areas of shortages or deficiencies in training.

CHAPTER 7

EMPLOYMENT

Introduction

The first term of reference for the study related specifically to the employment of graduates and diplomates. The research matrix, presented in Figure 2.1 and in more detail in Appendix III shows how this term of reference was expanded, in context, to involve the student and employer groups surveyed.

The first element in the key research area of employment described in Chapter 2, was 'work experience'. The term work experience referred to work undertaken prior to the completion of a further course of study at the post-secondary school level. The second element considered was 'work history' and referred to work undertaken after the completion of a course at the post-secondary school level.

Measures of job satisfaction were related to the work history of the graduates and diplomates. This also addressed the first term of reference for the study. In addition the changes in past trends and future employment opportunities for graduates and diplomates have been examined from the point of view of the employer since they are factors which might influence the career patterns of students leaving school and entering tertiary studies.

A large proportion of the data included in this section is devoted to describing the type of and changes in the work and study patterns of students, graduates and diplomates. This information would also provide the basic data for future studies into the effect of work experience and work history on attitudes to employment and employment prospects.

Work Experience of Students

In Chapter 6 it was noted that the proportion of persons who went straight from secondary school to some form of further studies has been decreasing during the last few years (see Table 6.4). Presumably this change has been accompanied by an increase in the work or employment activities of young people. Some further information on these changes is provided in Tables 7.1 to 7.3. These tables list both the type of job that a student might have held and the proportion of students who have held each type of job. Data are presented for (1) the total student samples; and (2) the educationally inexperienced or those who were attempting their first course of study at the time of the survey.

From Table 7.1 it is evident that there was no substantial difference between the proportion of new and final year students who had had some form of work experience

Table 7.1 Work Experience of All New and Final Year Students

Job type	New students % of Total N[a]	Final year students % of Total N[a]
Before Course:		
Part-time or casual	26	20
Full-time in field of training	13	15
Full-time out of field of training	41	38
During Course:		
Part-time or casual	19	39
Full-time in field of training	13	40
Full-time out of field of training	13	32
Total N	1277	1348

[a] These percentages do not necessarily add to 100 per cent.

before their current course. As might be expected the higher proportion of final year students had had work experience during their current course. These findings have been obscured to some extent by the inclusion of respondents who were not undertaking their first course but their second, third or fourth course as indicated in Figure 6.1.

From Table 7.2 it is seen that for the educationally inexperienced groups of students a higher proportion of new students than final year students had held part-time or casual work before their first course of study. However, there has been no corresponding substantial increase in the proportions who had held full-time employment before a first tertiary level course.

It should also be noted that a very low proportion of educationally inexperienced new and final year students (six per cent for each group) were enrolled in a course in the same field as their previous full-time employment. About one-third of both groups of students were enrolled in courses not related to their previous area of full-time employment.

Table 7.2 Work Experience of New and Final Year Students Undertaking a First Tertiary Level Course

Job type	New students % of total N[a]	Final year students % of total N[a]
Before Course:		
Part-time or casual	26	17
Full-time in field of training	6	6
Full-time out of field of training	31	28
During Course:		
Part-time or casual	20	44
Full-time in field of training	7	36
Full-time out of field of training	9	31
Total N	928	912

[a] The percentages do not necessarily add to 100 per cent.

Table 7.3 Description of the Type of Job, Length of Time and Average Number of Jobs Held by New and Final Year Students Undertaking a First Tertiary Level Course

Job type	Time job held: New students (N=928) Up to 2 mths %	3-6 mths %	7-12 mths %	1-2 yrs %	2-8 yrs %	Above 8 yrs %	Total %	Mean (mths)	Median (mths)	Average no. of jobs
Before Course:										
Part-time or casual	37	50	9	3	1	-	100	4.9	3.8	1.6
Full-time in field of training	9	14	8	23	29	17	100	41.4	21.2	1.7
Full-time out of field of training	29	10	10	8	18	25	100	38.9	12.8	2.6
During Course:										
Part-time or casual	43	55	-	-	2	-	100	3.4	2.6	1.4
Full-time in field of training	6	81	4	7	2	-	100	7.4	6.0	1.0
Full-time out of field of training	21	71	6	2	-	-	100	5.4	5.9	1.1
	Time job held: Final year students (N=912)									
Before Course:										
Part-time or casual	48	39	11	1	1	-	100	4.1	2.6	1.3
Full-time in field of training	14	15	15	13	26	17	100	35.2	14.3	1.6
Full-time out of field of training	30	22	12	9	15	12	100	25.1	5.8	1.8
During Course:										
Part-time or casual	20	39	36	4	1	-	100	7.2	6.1	1.9
Full-time in field of training	19	26	10	14	29	2	100	23.4	11.0	1.6
Full-time out of field of training	26	42	13	6	12	1	100	11.5	4.2	1.7

Note 1: See Table 7.2 for an indication of the proportion of the sample with experience in each job type.
Note 2: The length of time for which part-time or casual jobs were held were converted to full-time equivalents.

Substantial numbers of final year students had some form of part-time or full-time work experience during their first course. The results for the patterns of work experience of new students during their first course is somewhat confusing. Assuming that about one-third of total CAE enrolments were part-time students, it is very surprising that only a total of 16 per cent reported having held full-time work during the course even though these students were in their first year of study. It is most possible that the non-responses to the survey consisted largely of part-time students. Unfortunately there was no practical way of overcoming this problem. The inclusion in the sampling frame of a part-time/full-time attendance pattern dichotomy as a stratification variable would have resulted in a very complex sampling design and elaborate procedures for weighting the data collected. Some indication of the 'full-time attendance pattern' bias in the data is shown in Table 8.5 where it can be seen that of the 865 new students and 876 final year students who were sampled, over 80 per cent were full-time students.

Bearing this in mind, however, an attempt was made to quantify the various types of work experience to gauge changes in the work patterns of VIC students. Hence a monthly time frame was used to assess the length of time jobs were held. In Table 7.3 the distributions are recorded for:

1 the time range for various jobs;
2 the average or mean time different types of jobs were held;
3 the median time (point at which 50 per cent of the sample fall above or below); and
4 the average number of jobs held.

In the interpretation of the data in Table 7.3 reference should be made to Table 7.2 where the proportion of the sample with each type of work experience is given. The percentages given for each type of job in Table 7.3 refer therefore to the overall proportions given in Table 7.2.

Some trends emerge. For example, the average number of part-time jobs or casual jobs held by new students before their first tertiary course was higher than the average number held by final year students (1.6 jobs as compared to 1.3 jobs on average). The time span for these jobs held by new students was also higher.

Similar trends are evident for the job type 'full-time ... before course'. Also there has been an increase in the length of the full-time work experience of the new students as compared with the final year students.

Although this delay in entering tertiary studies direct from school has been noted by others (see Karmel, 1979) the 'nature' of the intervening year (or two) has not previously been examined. For example, from Table 7.3 it is evident that this increase in the amount or length of relevant previous work experience has not been accompanied by a noticeable increase over the last three to four years in the proportion of entrants to

Table 7.4 Work Experience and Work History of Graduates and Diplomates: Relationship of a First Job and First Degree or Diploma Completed

Job type	First job taken up before completion of first degree or diploma		First job taken up after completion of first degree or diploma	
	1976 %	1978 %	1976 %	1978 %
Full-time study and related work	5	2	-	-
Employed FT in field of training	61	40	71	77
Employed FT out of field of training	20	38	23	13
PT or casual in field of training	2	3	4	5
PT or temporary job only	12	17	2	5
Total %	100	100	100	100
Total N	202[a]	358[b]	222	225

[a] Forty-eight per cent of 1976 group.
[b] Sixty-one per cent of 1978 group.

Note: 1976 group: an additional 28 cases were either unemployed or involved in other activities after a first degree or diploma. There were 21 cases with missing data.

1978 group: an additional 46 cases were either unemployed or involved in other activities after a first degree or diploma. There were 31 cases with missing data.

their first course with this type of extensive experience (see Table 7.2). From Table 7.3 it can be seen that for both the new and final year groups, 17 per cent of the sub-groups with full-time work experience in their field of training had greater than eight years experience before commencing a first course. However, a higher proportion of new students than final year students had had in excess of eight years experience in full-time work out of their field of training before commencing their first course. In addition a substantial proportion of new students had between one and two years relevant work experience before commencing a first course (23 per cent of the new students, 13 per cent of the final year students).

The increase in the measured average length of time for full-time jobs held before commencing a first course and not related to a field of training can be attributed, in this case, to the influx of new students with greater than eight years work experience.

A similar table for the total group of new students and final year students is presented in Table A.16. The effect of including the educationally experienced and work experienced group in the total sample is clearly demonstrated by the increase in the average number of jobs and the median times for the different types of job held (compare Tables 7.3 and A.16). The work history of students with respect to work undertaken after the completion of any first post-secondary course was not studied.

In conclusion, the changes in the distribution of age of students entering tertiary studies have been accompanied by changes in the work experience of the tertiary student population. The long-term benefits, if any, in terms of the level of performance at work and the future employability of these students has yet to be established.

Work Experience and Work History of Graduates and Diplomates

For the graduate and diplomate samples, measures of work experience and work history were combined in the one analysis. For those graduates and diplomates who completed their first degree or diploma in 1976 or 1978 the type of the first job held (full-time, part-time and in or out of the field of training), and the position (status) of this first job with respect to the first degree or diploma completed is shown in Table 7.4.

Several conclusions can be drawn. First, the more recent graduates and diplomates who graduated in 1978 (61 per cent of the 1978 group) were more likely to have taken up a first job before completing a first degree or diploma than were those who graduated in 1976 (48 per cent of the 1976 group). Secondly, the first job for the 1978 group was more likely not to be related to a field of training than for the 1976 group (38 per cent for the 1978 group as compared to 20 per cent from the 1976 group). Correspondingly, the 1976 group were more likely to have taken up a first job, before completing a course, related to a specific field of study than were those in the more recent group. However, the introduction of 'sandwich' type courses, with relevant work experience components, in

Table 7.5 Work Experience of Graduates and Diplomates who Graduated with a First Degree or Diploma in 1976 or 1978: Types of Jobs Held

Job type	All jobs taken up before completion of first course	
	1976 % of Total N[a]	1978 % of Total N[a]
Full-time study and related work	4	4
Employed FT in field of training	52	55
Employed FT out of field of training	18	38
PT or casual in field of training	2	4
PT or temporary job only	9	20
Unemployed, other activities	-	1
Total N	473	660

[a] A graduate or diplomate could be counted in several of the job type categories, hence percentages do not tally to 100.

the early 1970s and the rapid growth in some Humanities type courses in the VIC system during the 1970s could be expected to have had some effect on these findings.

Thirdly, there have been small increases in recent years in the proportion of persons undertaking part-time or casual work. This finding is in keeping with the general trend for students to become increasingly involved in short-term work before and during a first degree or diploma (see Table 7.2 for a comparison).

For those graduates and diplomates who took up their first job after completing their course, a slightly higher proportion of the 1978 group (77 per cent) than the 1976 group (71 per cent) moved in to employment related to the course they had taken. The 1976 group were more likely than the 1978 group to have taken up a first job after graduation out of a field of training (23 per cent and 13 per cent respectively). However, the 1978 group of graduates and diplomates had a higher rate of initial unemployment and involvement with other activities than the 1976 group. Thus a higher proportion of the 1978 group had not found full-time employment at the time of the study. A better illustration of this trend can be found in Table 7.7.

Comparisons with Students

Although the job type descriptors used in Tables 7.2 and 7.5 are not identical, some comparisons can be made. Lower proportions of students than graduates and diplomates had been involved in work related to their field of studies. It can be seen that 52 and 55 per cent of the graduates and diplomates (1976 and 1978 respectively) had taken up a job related to their studies before completing a first course. Only 36 per cent of the final year students sampled had a job related to their field of work. This was matched with a substantial increase in the numbers involved in work not related to a field of studies. A factor which might be related to these changes is a change in the average course load

due to increased enrolments in courses with low contact hours (e.g. some Humanities courses). Low course loads would provide opportunities for students to take on extra forms of employment.

An increase in the enrolments of self supporting students or the necessity to undertake work to supplement student allowances might also be considered as an important factor which altered the patterns of work experience of the student population from those of their counterparts of some years earlier.

The reasons are complex, but if hypotheses regarding the positive effects of work experience on attitudes to work and job satisfaction can be supported then much is to be gained from the employers point of view. It remains that work experience might be of value to some groups of students and not others. For example, there is no conclusive evidence to support the general belief that concurrent work experience in educational studies programs have long-term benefits for either the student (and graduate) or the employer (National Academy of Education 1979:103-105).

A final point should be made in connection with the interpretation of these data. The study referred to students, graduates and diplomates of the Victoria Institute of Colleges. The proportion of students commencing tertiary courses immediately after completing school varied from state to state and between sectors (TEC, 1978:37). Consequently the structure of the work experience which was undertaken by students enrolled in Victorian CAE's might or might not be replicated in other systems.

Job Satisfaction of Graduates and Diplomates

Measures of overall job satisfaction were obtained for up to five jobs and activities listed by graduates and diplomates. Any attempt to incorporate an evaluation of each of the characteristics (salary, people, etc.) for each job listed would have required the presentation of a large and unmanageable amount of data. Admittedly information is lost when more global measures are substituted for individual descriptors. It could also be argued that there would be a tendency for respondents to regress towards the mean in their response patterns when reporting on the jobs they held several years before this study was conducted. This exacerbates the problem of detecting changes in job satisfaction due either to increased job mobility or as a result of a change in the type of employment.

The first term of reference for the study called for an indication of the proportion of graduates and diplomates who found satisfactory work. By inference this included a measure of job satisfaction as well as establishing the length of time it took for graduates and diplomates to find a job, and the time required to find a job related to their training.

As a first step in the analysis, the average measures of job satisfaction for both the 1976 and 1978 groups were determined. The results are shown in Table 7.6.

Table 7.6 Average Measures of Job Satisfaction for Successive Jobs

Job number	1976 group	1978 group
1	4.6 (N=740)	4.6 (N=971)
2	4.8	4.9
3	4.9	5.0
4	5.3	5.1
5	5.6 (N=251)	5.8 (N=262)

The increase in the average ratings from job number 1 to job number 5 in both groups is of the order of one standard deviation (approximately 1.2 for all jobs). In these data, for each job number recorded a number of different types of job are included. For example, job number one for the 1976 group is made up of the following job types and proportions of graduates and diplomates:

Full-time study and related work	2%
Employed full-time in a primary field of training	61%
Employed full-time out of a primary field of training	12%
Unemployed	4%
Part-time or other work in a field of training	2%
Other activity	3%
Part-time or temporary work	6%

In the data presented in Table 7.6 no indication has been given of whether the ratings of job satisfaction related to work experience (job held before a course) or work history (job held after a course). Another complicating factor is that the above data are not related to any level of award. In Chapter 6 it was demonstrated that about 10 per cent of the sample had obtained a certificate as a first award.

The complex nature of the samples have been examined in previous sections. But the general principle that job satisfaction increases with job mobility and job experience (and consequently with age) is supported by research work carried out overseas (see Quinn, Staines & McCullough, 1974; Gottfredson, 1977).

As with previous information reported in this chapter those graduates and diplomates who graduated with their first degree or diploma in 1976 and 1978 were selected out for further examination. Information on measures of job satisfaction for graduates and diplomates who graduated with a first degree or diploma in 1976 or 1978 is presented in Table 7.7. Several important features of the data should be noted. First, it referred to two identifiable samples, 1976 and 1978. Second, the data referred to job satisfaction ratings of a first full-time job after completion of a first degree or diploma. Third, the analysis incorporated the notion job sequence. Two groups are recognizable:

1 those whose very first job was obtained after completion of a course; and

2 those who held a second or higher numbered job after completion of a course.

Table 7.7 Ratings of Job Satisfaction for Graduates and Diplomates who Graduated with a First Degree or Diploma in 1976 or 1978

Description of job	Ratings of job satisfaction 1 %	2 %	3 %	4 %	5 %	6 %	7 %	Total %	N	Average or mean rating
1976 Group										
(a) First job after completion of first degree or diploma i.e. for those not employed at end of course.	4	4	12	20	32	20	8	100	344	4.7
(b) Very first job taken up after completion of first degree or diploma.	4	3	13	24	30	20	6	100	222	4.5
(c) Second or higher numbered job but taken up after completion of first degree or diploma.	4	5	11	12	35	22	11	100	122	4.8
1978 Group										
(a) First job after completion of first degree or diploma i.e. for those not employed at end of course.	1	4	11	18	24	32	10	100	406	5.0
(b) Very first job taken up after completion of first degree or diploma.	2	4	12	19	24	31	8	100	225	4.8
(c) Second or higher numbered job but taken up after completion of first degree or diploma.	0	3	9	18	25	32	13	100	181	5.2

Note 1: (b) & (c) are subsets of (a)

Note 2: Ratings 1 = Terrible
2 = Unhappy
3 = Mostly dissatisfied
4 = Mixed - equally dissatisfied and satisfied
5 = Mostly satisfied
6 = Pleased
7 = Delighted

Both groups still refer to a first job after completion of a first course. Job sequence therefore is related both to those with no work experience and with some work experience. This approach could also be extended to involve a specific time base such as 'months in jobs' although it was not used in this investigation.

From Table 7.7 it can be seen that the overall level of job satisfaction achieved in a first job after completing a first degree or diploma was similar for the two groups (4.7 for 1976 and 5.0 for 1978). If the current belief that the more recent graduates and diplomates have been experiencing greater difficulty in finding suitable employment were valid then a lower average rating would be expected for the 1978 group than the 1976 group. However, it is surprising to note that the average ratings for the 1978 group are marginally higher than those for the 1976 group. Nevertheless it should also be noted that the job satisfaction ratings have been calculated for those who actually achieved a job after completing a course.

It would appear that those graduates and diplomates with no work experience prior to taking up a first job after completing their studies expressed a lower level of job satisfaction (with their first job) than those with some employment experience. The differences shown in Table 7.7 are small. Furthermore, this result must be qualified in so far as the length of previous work experience and the appropriateness of this work (related or not related to a field of study) have not been taken into consideration in the information reported in Table 7.7. For example, the average job satisfaction rating achieved for those 1976 graduates and diplomates employed in a first job in a field of training (either before or after completing a course) was 4.9, while the average rating for those not employed in a field of training (either before or after completing a first course) was 3.9. The findings have not been tabulated in this report.

An examination of the actual ratings obtained for both group reveals that those graduates and diplomates with some work experience were more likely to use the highest satisfaction ratings (6 and 7) than those with no work experience prior to completing a first course and taking up a first job.

In summary, the predominant factors which were related to job satisfaction are:

1 employment experience;

2 correspondence between employment experience and tertiary studies; and

3 year of graduation with the more recent graduates and diplomates indicating a higher level of job satisfaction.

Range of Job Satisfaction

About one fifth of both groups of graduates and diplomates rated their first job within the 'terrible' to 'mostly dissatisfied' range (see Table 7.7). However, as previously noted a higher proportion of the 1978 groups than the 1976 group were inclined to be 'pleased' or 'delighted' with their first job after completing their first course. The range of values

used by the 1976 group was smaller than that used by the 1978 group, which resulted in about 65 per cent of the 1976 group using the middle three categories whereas only about 55 per cent of the 1978 group used these categories. The job recollections of the 1976 group were more likely to be coloured by subsequent job experiences.

Time Taken to Find a Job After Completing a Degree or Diploma

In a second examination of the work history of graduates and diplomates, the time taken to find work after the completion of a course was calculated. It should be noted that this analysis refers to those respondents who were not in full-time employment at the completion of their course. Two separate groups were considered, namely the total group and the educationally inexperienced sub-group consisting of those who had completed only their first degree or diploma. Information on the time taken to find full-time employment by the different groups and sub-groups is shown in Table 7.8.

The median times taken to find any job for both the 1976 and 1978 total groups were 1.8 months. A closer examination of the distributions shown in Table 7.8 reveals that at the end of a five month time interval, that is five months after a course was completed, and in most cases courses were completed in November, a higher proportion of the 1976 group than the 1978 group had found employment. The proportions recorded, 84 per cent for the 1976 group and 78 per cent for the 1978 group, are somewhat higher than those data produced by the Graduate Careers Council of Australia (GCCA). The GCCA data are not strictly comparable with the data shown in Table 7.8 because the GCCA data are based on the destinations (further study, employment, travel) of graduates and diplomates at a particular reference date, namely 30 April of each year. However, the parallels are obvious. The more recent graduates and diplomates had experienced greater difficulty in finding full-time employment although the magnitude of the differences in the time taken do not appear to be as significant as some media reports have suggested.

When the educationally inexperienced graduates and diplomates are considered as separate groups, the proportions having found full-time work at the end of five months are of the same order as those proportions quoted for the total group.

If a period of less than three months is considered then again there are only small differences between the 1976 and 1978 groups in the time taken to find any type of full-time job. For the total groups, 60 per cent took less than three months. Those who graduated with a first degree appear to have had slightly better job prospects than those with additional qualifications who were included in the total group. For example, 66 per cent of the 1976 group with only a first qualification had found a job in less than three months, while only 60 per cent of the total group could report having obtained a full-time job within that period.

Table 7.8 Time Taken to Find a Full-Time Job by Graduates and Diplomates not Employed at the Completion of a Course

	Not empl. FT at end of course N	Time taken (months) Less than 1 mth %	1 %	2 %	Less than 3 %	3 %	4 %	5 %	Less than 6 %	6 %	7-12 %	13-24 %	25+ %	% Never employed in FT job	Median time	Mean time
Total 1976 Group (N=782)																
To find any FT job[a]	485	25	20	15	60	12	6	6	84	2	7	2	2	3	1.8	3.2
To find FT job in field of training	485	13	18	13	44	11	5	6	66	2	10	4	4	14	3.0	4.7
Total 1978 group (N=1014)																
To find any FT job[a]	640	30	16	14	60	9	7	2	78	3	7	2	c	10	1.8	2.5
To find FT job in field of training	631	20	13	13	46	7	7	3	63	3	7	5	c	22	3.1	3.5
Those who graduated with a first degree or diploma in 1976 (N=473)																
To find any FT job	348	26	22	18	66	12	5	4	87	2	7	1	1	2	1.6	2.5
To find FT job in field of training	336	13	19	16	48	11	5	4	68	3	10	4	3	12	2.6	4.3
Those who graduated with a first degree or diploma in 1978 (N=660)																
To find any FT job	487	30	16	16	62	8	7	2	79	3	6	2	1	9	1.8	2.5
To find FT job in field of training	465	20	14	15	49	7	7	3	66	3	7	4	c	20	2.7	3.2

a See Tables A.17 and A.18 for detailed statistics for individual courses and levels.
b Mean times are based on total subsample numbers (weighted) excluding those who had never held a FT job.
c Less than 1 per cent in these cells.

The time taken to find a job in the field of training of the graduate and diplomate was also assessed. As expected the time taken to find a job of this type was significantly longer than the time needed to find any job. The median times in months related to this type of job were 3.0 months for the 1976 total group and 3.1 months for the 1978 total group. Of particular interest though are the educationally inexperienced graduates and diplomates. For the less than three month cut-off periods this group took less time to find a job in an appropriate field of training than did the total group, which included the educationally experienced graduates and diplomates. Again the 1978 group took a marginally longer time than did the 1976 group (2.6 months for the 1976 group and 2.7 months for the 1978 group) to find jobs in their field of training.

Some comments need to be made, however, with respect to the measurement of time in this way. The median times quoted are based on all of the cases described in each category in Table 7.8. It should be noted that there were significantly higher proportions of the 1978 groups who had never been employed in full-time jobs at the time of the survey (July-September 1979). For example, about 20 per cent of the 1978 group (both the total and the educationally inexperienced groups) had not found a job in an appropriate field of training at the time of the survey. However, the mean times were based on those who had actually found work. Very few graduates and diplomates had taken longer than two years to find an appropriate full-time job.

Two factors appear to be operating. First, the 'good' quality graduate and diplomate or the graduates and diplomates in specific areas of demand, would appear to have found work relatively easily. Evidence for this can has found by using different cut-off points in the time taken to find employment. Secondly, beyond the second or third month after completing a course the 1978 group would appear to have experienced greater difficulty in finding employment with a result that higher proportions would appear to have never been employed in a full-time job. No evidence was available from the study to explain the increased proportions in the latter category. Some data supplied in 1979 by the Graduate Careers Council of Australia (GCCA, 1979) have suggested that increasing numbers of new graduates and diplomates are choosing not to take up full-time employment.

Course Differences

Detailed information on the time taken to find any type of job for each course and each level for the total groups are presented in Tables A.17 and A.18. Graduates and diplomates from the fields of Pharmacy, Paramedical, and Maths and Computer Science would appear to have experienced very few problems in locating full-time employment in either 1976 or 1978, since approximately 75 per cent found employment in one month or less. Trends for some of the other courses were difficult to establish because of the relatively small numbers involved (see for example, the 1976 sample in Business and Administration, degree).

The majority of the 1976 and 1978 graduates and diplomates who had never been employed in a full-time job were from the fields of Art and Design, General Humanities, Social Science (diploma), Chemistry (diploma) and Medical Technology (diploma).

Graduates tended to find work sooner than diplomates although the differences were not signficant for many courses. There were some small differences between the 1976 and 1978 groups for individual courses. Cumulative percentages (for a time-period of three months or less) are shown for each course and level in Tables A.17 and A.18 to facilitate the examination of the data.

A qualification must be made concerning this part of the study which is related to the relatively low response rates for the individual courses and levels of courses. In most cases the response rates, as shown in Tables A.7 and A.8, were below the 50 per cent mark and yielded fewer than 50 cases per stratum. Hence the estimates given in Tables A.17 and A.18 for specific courses and levels must be interpreted with some caution. In addition, the assumption was made that the time taken to find employment was a true indication of the employment market difficulties that existed at the time. More accurate measures might consider times such as when an individual starts looking for work or when an individual submits a job application. Some attention has been given to this issue in Chapter 11.

Employment Trends

Employers' Views

In the previous pages it was noted that there had been changes in the employment opportunities for recent graduates and diplomates from 1976 and 1978. The time taken for graduates and diplomates to find employment in their field of training was considerably longer than might have been expected. About one-fifth of the educationally inexperienced graduates and diplomates from 1978 had never found full-time work in their field of training at the time of the survey (see Table 7.8). Unfortunately no comparable data are available for periods of up to five years before the time of the survey except those provided by the Department of Employment and Youth Affairs (1979). These data, derived from the GCCA survey material, examine the employment destinations and type of work done for college and university graduates and diplomates. Trends in the demand for graduates and diplomates were measured by the employment rate at a specific reference point, namely 30 April of each year. It was concluded that following the unprecedented increases in the past in the numbers completing tertiary courses with an average annual growth rate of 4.2 per cent for the university sector and 14.2 per cent for the CAE sector between 1973 and 1977, sustained growth in the output in most courses of study was likely to be accompanied by an increasingly competitive labour market. Further, it was concluded that marked changes in private and public

employer recruiting patterns were likely to create further imbalances in particular areas. For example, it was predicted that the demand in the near future for graduates in the private sector would be for scientists, engineers and tertiary trained secretaries.

The past changes in the rate of employment of new graduates and diplomates during the last five years, from the employers point of view, are recorded in Table 7.9. The demand for graduates has been greater than for diplomates. Furthermore, these changes are likely to have been associated with the upgrading of professional standards as with the 1980 rule for the registration of engineers in Australia or the phasing out of some diploma level courses in favour of degree level courses.

Most areas in which qualifications were obtained by new graduates and diplomates had experienced some growth. The areas in which the greatest demand has occurred have been in Business and Administration, Paramedical and Maths and Computer Science, a finding no doubt supported by graduate employment officers in CAE's. It should be noted, however, that the proportion of employers recruiting graduates and diplomates (see Table 7.9) varied greatly from area to area. For the area of Fine and Applied Arts only nine per cent of the employers who responded, actually employed graduates from these areas.

By contrast Table 7.10 presents a more conservative estimate of demand for new graduates and diplomates during the next five years. For all areas of study at least 70 per cent of all employers indicated that their rate of recruitment of graduates and diplomates would remain static over the next five years. The term 'remain static' was defined as a normal or average rate of recruitment. For some employers this might amount to three or four graduates in a particular area in each year. For other employers the normal rate of recruitment might be only one graduate every two years.

The terms 'noticeable increase' or 'noticeable decrease' were defined with change of approximately 25 per cent. Fewer employers indicated future increases of this magnitude as compared to past trends. Very few employers noted reductions in their rate of recruitment over the next five years.

Some indication of the areas in which significant increases or decreases, a 50 per cent or greater change, were envisaged were also sought in the employer questionnaire. A total of 21 organizations listed areas in which future significant changes were likely to occur. In almost all of the nine areas significant increases were indicated. The Business and Administration area was the one where the greatest increases were expected, particularly in the specific fields of Accountancy and EDP. The reasons given invariably related to the general upgrading and expansion of systems within the organization. However some respondents made comments that graduates and diplomates with experience were still preferred to the new graduates and diplomates.

The only areas of potential growth are, however, Business and Administration mostly in the private sector, Maths and Computer Science and the Paramedical area.

Table 7.9 Past Changes in the Rate of Employment of New Graduates and Diplomates (July 1974 to June 1979)

Area in which qualification obtained	Employers not recruiting graduates % of total N	Employers recruiting graduates: Past changes in rate of employment			Employers not recruiting diplomates % of total N	Employers recruiting diplomates: Past changes in rate of employment		
		Noticeably decreased[a] %	Remained static[b] %	Noticeably increased[c] %		Noticeably decreased[a] %	Remained static[b] %	Noticeably increased[c] %
Fine & Applied Arts	91	-	59	41	86	-	100	-
General Humanities	77	4	87	9	89	9	71	20
Social Sciences	65	-	87	13	72	5	78	17
Business & Admin.	24	3	61	36	33	8	63	29
Applied Science & Technol.	59	2	77	21	58	8	78	14
Paramedical	83	-	64	36	85	10	78	12
Engineering	38	1	80	19	41	4	82	14
Maths & Computer Science	60	8	59	33	70	1	70	29
Built Environment	80	3	88	-	78	-	97	3

Note: a Noticeably decreased: approximately 25 per cent change.
b Remained static: should remain relatively constant, normal recruitment rate (e.g. 2 - 3 graphic artists per year).
C Noticeably increased: approximately 25 per cent change.

Table 7.10 Future Changes in the Rate of Employment of New Graduates and Diplomates

Area in which qualification obtained	Employers not recruiting graduates % of total N	Employers recruiting graduates: Future changes in rate of employment			Employers not recruiting diplomates % of total N	Employers recruiting diplomates: Future changes in rate of employment		
		Noticeable decrease[a] %	Remain static[b] %	Noticeable increase[c] %		Noticeable decrease[a] %	Remain static[b] %	Noticeable increase[c] %
Fine & Applied Arts	88	-	100	-	85	-	100	-
General Humanities	79	-	100	-	87	-	100	-
Social Sciences	65	3	81	16	72	4	83	13
Business & Admin.	20	-	73	27	30	-	80	20
Applied Science & Technol.	51	-	76	24	56	3	76	21
Paramedical	80	-	73	27	82	-	72	28
Engineering	39	-	80	20	45	2	81	17
Maths & Computer Science	58	-	74	26	65	-	79	21
Built Environment	84	2	85	13	81	2	87	11

Note: a Noticeable decrease: approximately 25 per cent change.
b Remain static: should remain relatively constant, normal recruitment rate (e.g. 2 - 3 graphic artists per year).
C Noticeable increase: approximately 25 per cent change.

Growth in the Applied Science and Technology area is also likely to be higher in the future than in the past and the demand is likely to come from employers in the public sector.

Although the future demand appears to have stabilized in many areas there have been small increases in the number of employers who are likely to recruit, in the future, from particular areas of study. This will have some effect on the demand in these areas. By comparing Tables 7.9 and 7.10 it can be seen that the proportion of employers not recruiting graduates and diplomates has dropped for most areas. The changes range from two per cent increase in the number of employers recruiting graduates in Maths and Computer Science to an eight per cent increase in the number of employers likely to recruit graduates in the Applied Science and Technology area. The only areas in which the number of employers of new graduates and diplomates is likely to fall are in General Humanities, Engineering and the Built Environment.

The methods used in this study to assess future changes in the pattern of recruitment assumed a 'real increase' of two per cent per year over the next five years. It also assumed normal staff turnover rates within individual organizations. Possible future changes in employment policies within government departments were not considered.

The simplistic approach to the demand for graduates and diplomates was limited to providing an indiciation of trends. It did not provide a measure of the actual numbers of graduates and diplomates who might be required in some areas. Bearing in mind the needs expressed by employers in this study, a reduction in the output of graduates and diplomates in some areas, with a constant (current level) output in other areas, would seem to be a logical manpower policy for the immediate future. The reduction in output from particular areas to meet the employment demand (if any) assumes that the courses are specifically vocationally oriented. This assumption would be challenged by some educationists in fields such as Humanities and Arts.

Such a result is only achieved with some change in tertiary enrolments. The Committee of Inquiry into Education and Training has prepared four models on post-secondary enrolment projections (CIET, 1979, Vol. 2, Appendix C) to consider factors such as changes in the retention rate at the secondary school level, changes in the proportions proceeding direct to tertiary studies and changes in the proportions of 'indirect' commencers. The task of predicting (1) enrolments contingent upon these variables, and (2) output to meet employer demand is extremely difficult and further complicated by changes in government economic policies. The Carnegie Commission on Higher Education (1973), who are totally opposed to manpower planning exercises, has expressed strong support for the view that changes in the supply of graduates and diplomates should be dictated by shifts in the occupational preferences of students. Although this approach has merit from the student point of view it does little to accommodate student expectations when dramatic changes in the job market occur.

Non-Employers' Views

With respect to the non-employers of graduates and diplomates only 37 per cent of the sample of 61 respondents replied that they had at some stage in the past employed either a graduate or a diplomate. Future employment prospects with organizations of this type (see Chapter 6 for a description) would appear to be very limited. Only nine per cent said that they would employ a graduate in the future, a further 27 per cent were undecided and the remaining 64 per cent said that they would not employ a graduate within the next five years. The employment prospects for diplomates were only marginally better. Sixteen per cent said they would employ a diplomate, 32 per cent were undecided and the remaining 52 per cent said they would not employ a diplomate within the next five years. The areas of future recruitment nominated by the non-employers, with the number of employers shown in brackets, were:

Art & Design	(1)
Accountancy	(4)
Business & Administration	(4)
Chemistry	(2)
Civil/Structural Engineering	(2)
Other Engineering	(4)

The replacement of retiring staff, the upgrading of specific areas of skill, and the expansion of the company were the main reasons given for the future recruitment of graduates and diplomates. Only 23 per cent of the non-emloyers envisaged any difficulties in the recruiting of graduates and diplomates in the future. Very few companies bothered to provide any information on methods which might be employed to overcome the foreshadowed difficulties. One company stated they would use professional management consultants to help in the recruiting process. Another company stated that they would persist in advertising and would provide attractive benefits to overcome their prospective recruiting problems in this area.

In conclusion, the results of the study suggested an increased demand in four areas in the next five years. They were: Business and Administration, Computer Science, the Paramedical field and Applied Science and Technology. There is no evidence to suggest that the current rate of output of graduates and diplomates is not able to accommodate this demand in the short-term.

Future studies might consider the long-term impact of expansion in these areas in terms of fluctuations in supply and demand. The current demand might lead to oversupply in the near future along the lines of Freeman's 'cobweb feedback system'. This system of cyclic fluctuations has been particularly useful in explaining changes in student preferences and employer demands in areas where there is a one to one tie between education and occupation (Freeman, 1976:61).

Table 7.11 Past Sources of New Graduates and Diplomates (July 1976 to June 1979)

Approximate proportions recruited	Source					
	Australian Universities: % of employers		Australian Colleges of Advanced Education: % of employers		Overseas: % of employers	
	Grads	Dips	Grads	Dips	Grads	Dips
None	25	81	36	12	79	94
Up to 25%	9	8	16	1	17	5
26% to 50%	16	6	26	7	2	1
51% to 75%	22	2	8	5	-	-
76% to 99%	16	1	5	7	-	-
All	12	2	9	68	2	-
Total %	100	100	100	100	100	100
Total N	89	86	89	86	89	86

Sources of Graduates and Diplomates

The 1970s saw the rapid expansion and development of the CAE section within the total tertiary education framework. Short-term estimates, by the Tertiary Education Commission, on student enrolments until 1981 (TEC, 1978:57) indicate a period of no growth in either the CAE or University sectors. Thus the relative output from both sectors is likely to remain constant until about 1985. To date the impact of CAE's has been substantial but changes in their role and impact in the future are not likely to be as noticeable.

CAE's are required to be strongly vocational in their basic educational philosophy. Any decision by an employer to choose one type of graduate or diplomate from a college or university, over another must be related to the style of operation of the organization or personal preferences and experience arising from within the organization. From this survey it was found that only 15 per cent of the employers recruited from a particular type of tertiary institution. Reasons given included the uniqueness of a particular course, prestige, close liaison with academic staff and the institution, and the superior quality of the graduates. The latter reason mostly related to university graduates. A few employers recruited from particular institutions because of their proximity to the institution.

An indication of the proportion of university, to CAE and overseas graduates and diplomates employed during the past three years and likely to be employed during the next three years, was sought in the questionnaire administered to employers. The purpose of the question was to examine possible movements in preferences for a particular 'type' of graduate and diplomate. The data collected are shown in Tables 7.11 and 7.12.

Table 7.12 Future Sources of New Graduates and Diplomates (July 1979 to June 1982)

Approximate proportions recruited	Source					
	Australian Universities: % of employers		Australian Colleges of Advanced Education: % of employers		Overseas: % of employers	
	Grads	Dips	Grads	Dips	Grads	Dips
None	24	77	31	20	89	94
Up to 25%	8	9	16	2	11	5
26% to 50%	19	7	35	3	-	1
51% to 75%	22	3	6	4	-	-
76% to 99%	14	1	3	8	-	-
All	13	3	9	58	-	-
Total %	100	100	100	100	100	100
Total N	85	82	85	82	85	82

This type of comparison is only possible with a relatively stable output of graduates and diplomates from both the CAE and university sectors. The comparison was not made with the intention of evaluating the merits of either system. Several observations can be made from the data in Tables 7.11 and 7.12.

1 The proportion of employers recruiting from the CAE sector is likely to increase marginally during the next three years. This is likely to be achieved as a result of the anticipated reduction in the number of graduates recruited from overseas.

2 The proportion of employers recruiting from the university sector is not likely to differ from the past trends.

3 Employers are less likely to recruit overseas graduates in the near future.

4 Employers are less likely, in the future, to recruit diplomates from the CAE sector.

5 The proportion of employers recruiting diplomates from the university sector is likely to remain relatively constant in the near future.

In summary, there would appear to be a general movement towards employing CAE graduates in the near future at the expense of CAE diplomates and overseas graduates. Also there is likely to be some small redistribution of the ratio of university graduates employed with the 26 per cent to 50 per cent proportion range receiving the largest increase. However, the increase for the university sector is not likely to be as large as for the CAE sector. Here the proportion of employers employing between a quarter and half of their graduates from the CAE sector would appear to be likely to rise from 26 per cent to 35 per cent.

In conclusion, there is not likely to be any significant shift in employers' preferences for graduates and diplomates from the university to the CAE sector during the next three years at least.

CHAPTER 8

JOB EXPECTATIONS

General Comments

One of the main purposes for using the value stretch procedure, described in Chapter 2 under the heading of Expectations, was that the maximum and minimum values nominated by the respondent for each of the job characteristics listed provided a basis for the respondent to further nominate levels that he expected to achieve and levels that he had actually achieved. No specific examples of maximum and minimum levels for the six job characteristics or job goals were provided in the questionnaire. Instead these decisions were left to the respondent.

The six job characteristics were useful also in that a 'degree of importance' or ranking could be attached by the respondent to specific job characteristics. Thus changes in the relative importance of the different job characteristics could be examined with respect to changes in time.

The different facets that were examined were:

1 the absolute level of aspiration, expectation, tolerance and achievement;
2 the difference between these levels (value stretch);
3 the degree of similarity between the levels (profile similarity); and
4 the degree of similarity between different groups;
5 the changes in the degree of importance of job characteristics with changes in time.

The following discussion is built around these five facets. It should be noted that all of the following discussion refers to the educationally inexperienced groups of students, and graduates and diplomates. Those who had completed more than one course were likely to have had more varied employment experience and hence very different expectations of work.

Levels of Aspiration, Expectation and Tolerance

For each level examined in the hierachy of values (level hoped for, level expected, and level tolerated) a range of one to seven was used. A value of one represented a very low value, a value of seven represented a very high value. The average scores or ratings for each job characteristic, level and group surveyed are presented in Table 8.1 and are illustrated diagrammatically in Figure 8.1.

By inspection of these data it can be seen that new students expressed a higher level of aspiration than did final year students. A similar pattern emerged with the graduate and diplomate samples where the 1978 mean ratings were, in general, higher than the 1976 ratings.

Table 8.1 Levels of Aspiration, Expectation and Tolerance for Different Job Characteristics for Students Undertsking their First Course and Graduates and Diplomates who Graduated from their First Degree or Diploma in 1976 or 1978

	Average ratings for:											
	New Students			Final Year Students			1976 Graduates and diplomates			1978 Graduates and diplomates		
Job characteristics	Level hoped for	Level expected	Level tolerated	Level hoped for	Level expected	Level tolerated	Level hoped for	Level expected	Level tolerated	Level hoped for	Level expected	Level tolerated
Salary	5.3	4.1	3.0	5.0	4.0	3.1	4.6	4.0	3.0	4.8	4.0	3.0
Advancement	5.6	4.3	3.1	5.5	4.3	3.3	5.1	4.3	3.3	5.3	4.4	3.3
Security	5.9	4.7	3.4	5.6	4.6	3.5	5.6	5.0	3.7	5.4	4.9	3.5
Responsibility	5.9	4.5	3.2	5.7	4.4	3.4	5.2	4.4	3.4	5.4	4.4	3.3
Skills	6.2	4.9	3.6	6.1	4.9	3.7	5.5	4.7	3.5	5.8	4.8	3.5
People	6.3	5.0	3.5	6.2	5.0	3.7	5.7	4.9	3.5	5.9	5.0	3.6

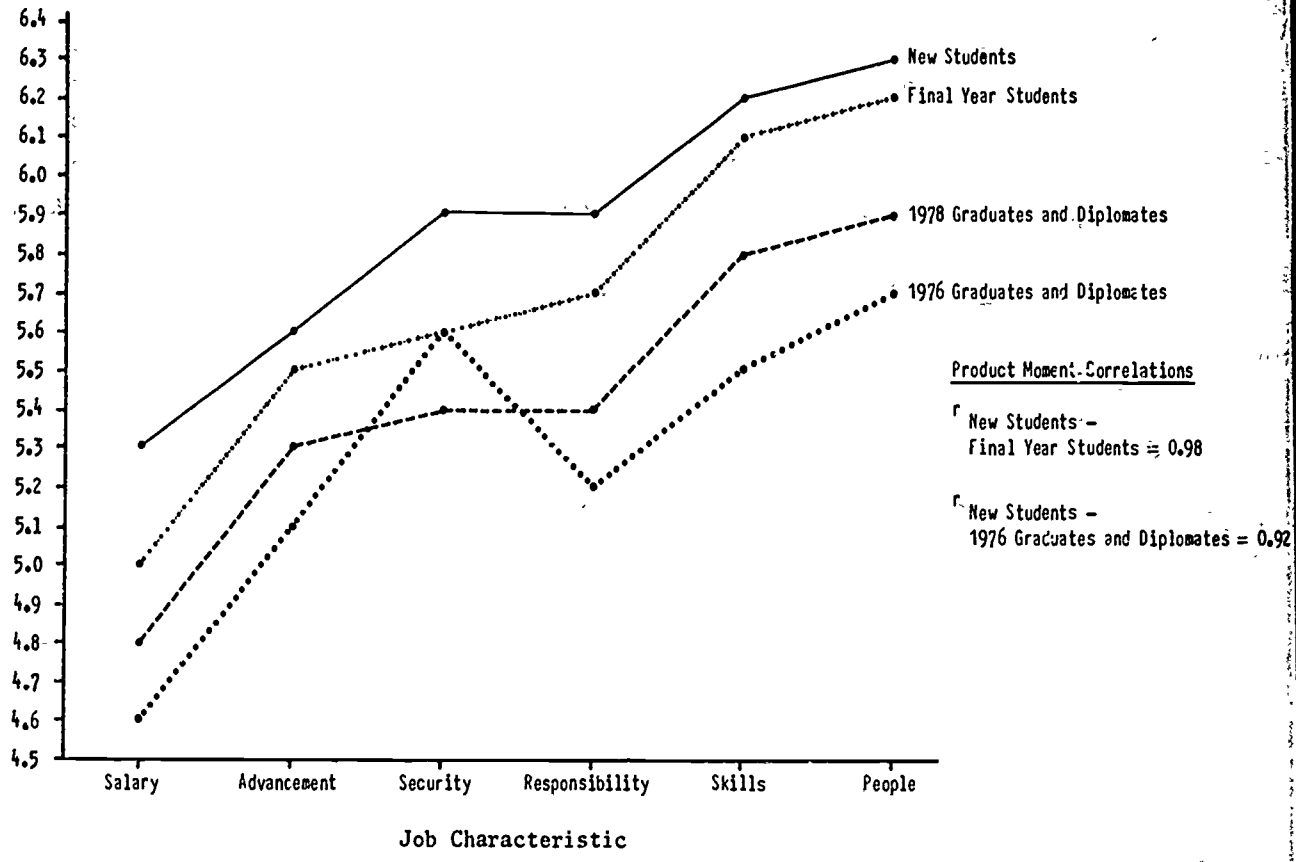


Fig The Job Aspirations of Students who were Undertaking their First Course and Graduates and Diplomates who Graduated from their First Course in 1976 or 1978

The expressed levels hoped for (job aspirations) for both groups of graduates and diplomates were lower than the student groups. Tests of significance of differences between mean ratings were not used since the direction of the difference was the most important feature and not the magnitude of the difference. One noticeable feature which was apparent in these comparisons was that the job characteristic 'security' had assumed a higher degree of importance for the 1976 group of graduates and diplomates than for the 1978 group.

From these findings it might be hypothesized that the trend should have been repeated for the expected and tolerated levels. However these differences and the direction of the differences were not as clear. The expected levels of achievement for each job characteristic were very similar for all of the groups. The only exception was with the job characteristic 'security', both groups of graduates and diplomates indicated a somewhat higher expected level of achievement in security than the student groups. Job security, an extrinsic factor associated with the reduction of job dissatisfaction (Herzberg, 1966), is likely to assume a greater importance during periods of economic upheaval and when taking on full-time employment. Because of the small differences in the levels of expectation found between the samples surveyed, data of the type illustrated in Figure 8.1 have not been presented.

From Table 8.1 it can be seen that at the bottom end of the value stretch schema the lowest level tolerated for the different job characteristics varied from group to group. The job characteristic 'salary' showed the most stability across the four groups. Students were more likely to tolerate a lower level of job security than the 1976 graduates and diplomates. Final year students seemed to have placed more importance on the achievement of the job characteristics 'skills' and 'people'.

Two points emerge from these observations. First, the maximum and minimum values for the job characteristics varied between the groups surveyed. The level hoped for was ordered hierarchically with new students having expressed the highest level of aspiration and graduates and diplomates having expressed a lower level of aspiration at the time of completing their course. This general observation supports one of the hypotheses proposed in Chapter 2. A second hypothesis, that the minimum levels (tolerated levels) were also ordered in the same way, was not supported by the data.

Two statistics, the product moment correlation (r) and the distance measure (D) were used to illustrate better these points. The correlation coefficient describes the similarity of the profiles. For example, in Figure 8.1 the correlation value for a comparison between the two student profiles of job aspirations was 0.98, an extremely high value.

The D statistic not only considers the relative shape of the profile but the dispersion of the mean scores from the profile average. Thus a profile while displaying a high degree of similarity (correlation) with another profile may also display a high degree

Table 8.2 Profile Comparisons: D Measures

Comparison	Hierarchy of values		
	Level hoped for	Level expected	Level tolerated
New students with Final year students	0.50	0.17	0.39
New students with 1978 Graduates and Diplomates	1.08	0.28	0.28
New students with 1976 Graduates and Diplomates	1.47	0.40	0.42
Final year student with 1976 Graduates and Diplomates	0.62	0.33	0.26
1978 Graduates and Diplomates with 1976 Graduates and Diplomates	0.54	0.20	0.24

of divergence. This is particularly important with the use of the 'value stretch' concept. The mathematical considerations of D are described in Nunnally (1967). Additional descriptions on the practical use of D are shown in Piper (1979) and Fordham and Ainley (1980).

The profiles illustrated in Figure 8.1 display both similarity and dispersion in an hierarchical order. Profiles have not been presented for the levels expected and tolerated. Instead the same type of information is contained in Table 8.2. Here it can be seen that the D measures for the hoped for levels show the greatest divergence. The values range from 0.50 to 1.47. The D values for the expected and tolerated levels were considerably smaller and of no real consequence.

Correlation coefficients were calculated for each of the cells in Table 8.2. In every case the coefficient exceeded 0.9. These data have not been presented.

The general conclusion which can be drawn is that the lowest level acceptable (tolerated) for all of the job characteristics used in the job description profile is independent of the group under survey. In addition, the changes in the degree of importance, rank order, of the job characteristics were minimal through all value levels. Thus the intrinsic job characteristics 'people', 'skills' and 'responsibility' are the most important job characteristics for all groups and are not sacrificed for the extrinsic rewards 'salary', advancement' or 'security' in the value system. The only real exception to this general rule was the job characteristic 'security' which assumed a higher rank order for the 1976 graduates and diplomates. These comments refer to changes in the individual's value system or hierarchy of values. They do not readily apply to what changes might arise in the value system when a first job is taken up, a point considered below in the section titled 'Jobs Achieved by Graduates and Diplomates' which is directly related to the fourth term of reference for this study.

Value Stretch

It follows from the previous discussion that the value stretch or value range between the level hoped for and the level tolerated would be greatest for the educationally inexperienced new students. The D measures for each group were calculated from the data shown in Table 8.1 and were:

New students	D = 6.29
Final year students	D = 5.49
1978 Graduates and Diplomates	D = 5.08
1976 Graduates and Diplomates	D = 4.64

In addition, there was a remarkable degree of similarity between the profiles for the level hoped for, the maximum level, and the level tolerated, the minimum level for each of the four groups. The correlation coefficients for these comparisons were:

New students	r = 0.93
Final year students	r = 0.97
1978 Graduates and Diplomates	r = 0.93
1976 Graduates and Diplomates	r = 0.93

The very high correlation values could have resulted from the use of a scale of limited range and sensitivity. For each level examined in the hierarchy of values (level hoped for, expected, tolerated) a range of one to seven was used. An increase in this range to perhaps 20 units and an increase in the number of job characteristics under consideration might have produced more variation in the average values obtained and hence different r and D values. Further, the style of the question with the examples given in the questionnaire ensured some similarity in the profiles. Some additional instructions related to the 'degree of importance' of the variables might have produced a different result.

Jobs Achieved by Graduates and Diplomates

For the graduates and diplomates it was possible to obtain a measure of job satisfaction through an extension of the use of the value stretch data. The data in Table 8.1 referring to the graduate and diplomate samples have been reproduced in Table 8.3. Ratings of job characteristics for a first full-time job after completing a first tertiary level course and ratings of job characteristics for a current job have also been recorded in Table 8.3. For some respondents the current job was the same as the first job after completing a first tertiary course. A series of correlation coefficients and D measures for comparisons of the different profiles are shown in Table 8.4.

Table 8.3 Jobs Achieved by Graduates and Diplomates

Job characteristics	1976 Graduates and Diplomates					1978 Graduates and Diplomates				
	Level hoped for	Level expected	Level tolerated	First job achieved	Current job	Level hoped for	Level expected	Level tolerated	First job achieved	Current job
Salary	4.6	4.0	3.0	3.8	5.0	4.8	4.0	3.0	3.9	4.6
Advancement	5.1	4.3	3.3	3.7	4.7	5.3	4.4	3.3	3.7	4.3
Security	5.6	5.0	3.7	4.7	5.4	5.4	4.9	3.5	4.6	5.3
Responsibility	5.2	4.4	3.4	4.1	5.5	5.4	4.4	3.3	4.2	5.1
Skills	5.5	4.7	3.5	3.9	5.0	5.8	4.8	3.5	4.0	4.7
People	5.7	4.9	3.5	4.9	5.4	5.9	5.0	3.6	4.9	5.3

Table 8.4 Profile Comparisons: Jobs Achieved and Levels of Aspiration and Expectation

Comparison	1976 Group r	1976 Group D	1978 Group r	1978 Group D
Level expected with First Job	0.82	1.10	0.74	1.13
Level hoped for with First Job	0.75	2.80	0.56	3.03
Level hoped for with Current Job	0.48	0.89	0.45	1.65
First job with Current Job	0.76	2.52	0.93	1.67

For both the 1976 and 1978 groups of graduates and diplomates the first full-time job held after the completion of a first tertiary course was, for all job characteristics, below their expectations. Even so there was a relatively high correlation between the expected level of achievement and the level actually achieved in a first job (0.82 for the 1976 group and 0.74 for the 1978 group, see Table 8.4). For all of the job characteristics, the rated level of achievement in a first job was above the rated level of tolerance.

The correlation between the levels hoped for (level of aspiration) and the levels achieved in a first job were lower than the expected-achieved correlations. This is better illustrated with the D measures shown in Table 8.4 where it can be seen that the distance between the level hoped for and the level achieved is far greater than the distance between the level expected and the level achieved in a first job.

The biggest differences between the level expected and level achieved have occurred with the job characteristics 'skills' and 'advancement'. It is surprising that graduates and diplomates believe that their skills are being used below their expected level when employers rate the use of specific skills as an important factor in the recruitment process. The variety of material covered in many current CAE and university courses might influence the graduates' and diplomates' levels of expectation as well as the ranges of expectations associated with the use of specific areas of skill. An alternative explanation might be to attribute this conflict in expectations to the new graduates' and diplomates' lack of understanding of the work environment.

The decline in the achieved level of 'advancement', as a job characteristic, is in keeping with the general downturn in economic growth during the last few years, although it was noted in Chapter 6 that about one-quarter of the employers surveyed had experienced a substantial growth in dollar turnover and number of employees in the last three years.

When the current job of a graduate or diplomate was compared to the original level hoped for, there was a general increase in the level of job satisfaction. Thus the ratings for each job characteristic approached or exceeded those for the 'ideal' job (see Table 8.3). The magnitude of this change was more pronounced for some job characteristics than for others. For example, the characteristic 'responsibility' assumed a much more

important role for the 1976 group than for the 1978 group. This movement, which is to be expected with changes in career ambitions and jobs, is reflected in the low correlation coefficients (profile similarity) for the level hoped for and current job (see Table 8.4). However, it should be noted that the D measures, shown in Table 8.4, indicate that the 1976 group of graduates and diplomates held current jobs closer to their level of aspiration than did the 1978 group of graduates and diplomates. One would expect even more change in the priority given to each of the job characteristics with future job changes and on future occasions. For these reasons direct comparisons of the ideal level or level hoped for, expressed on the completion of a course, and ratings for a current job are not all that helpful. Comparison of the degree of importance or rank order of job characteristics for each of the two levels is probably of more interest to research into questions of career and job mobility.

Perceived Job Prospects

The second approach used to examine job expectations enabled some comparisons to be made in terms of sex and course attendance pattern (full-time, part-time etc.). Both new and final year students were asked to indicate what they believed their prospects were for finding a full-time job in their field of training both within four months of completing a course, and between four and eight months of completing a course. The information related to these questions is shown in Table 8.5.

Referring to the 'very good' category only, a higher proportion of full-time male students than female students believed they had a very good chance of finding employment within four months of completing their course. However, the expectations of full-time new students were significantly lower than those of the full-time final year students. Only 24 per cent of the full-time new students as compared to 37 per cent of the full-time final year students believed that they had a very good chance of obtaining employment in a field of training within four months of completing a course.

Part-time students also displayed high expectations although these data are, in part, misleading because some part-time students were already employed in an area related to their studies at the time of the survey. Hence the more appropriate comparisons can be made between the new and final year full-time students.

When the categories 'very good' and 'good' were grouped together, the differences between the new and final year students were not as pronounced. Further, these levels of expectations or perceived job prospects were closely related to the current findings on the time taken for educationally inexperienced graduates and diplomates to find work in an appropriate field of training (see Chapter 7). From Table 7.8 it can be seen that approximately 64 per cent of the educationally inexperienced graduates and diplomates took four months to find appropriate employment. Based on the information available

Table 8.5 Job Prospects Perceived by New and Final Year Students: Students Enrolled in Their First Post-Secondary Course

	Prospects of finding full-time employment in field of training:									
	Within 4 months of completing course					Between 4 and 8 months of completing course				
	Very good %	Good %	Fair %	Hopeless %	N	Very Good %	Good %	Fair %	Hopeless %	N
FT New students:										
male	28	38	28	6	380					
female	21	37	33	9	330					
FT Final year students:										
male	40	27	29	4	425					
female	33	33	24	10	292					
FT New Students	24	38	31	7	713					
PT New Students	37	33	26	4	152					
Total New Students	27	37	30	6	865	45	32	20	3	849
FT Final Year Students	37	29	27	7	721					
PT Final Year Students	43	22	26	9	155					
Total Final Year Students	38	28	27	7	876	53	25	17	5	833

for these employment trends for graduates and diplomates, it would appear that full-time students have a reasonable understanding of the current job markets. This does not contradict the previous findings on the levels of aspiration or expectation related to specific job goals or job characteristics. It merely relates to perceived job prospects.

Conclusions

The data presented in this section have covered a variety of issues related to the key research area of expectations of employment. Of most importance though are the data relating to the fourth term of reference for the study. Hence it can be concluded that graduates and diplomates find initial employment below their level of expectations, mainly related to the areas of skills and advancement. The 1976 group appear to have found initial employment closer to their level of expectation than did the 1978 group. The correlation between the initial level hoped for and a job achieved diminished as both the time and the number of jobs increased (job and career mobility).

In the light of the current job market, the job prospects perceived by new students, in their first year, did not differ greatly from those of final year students. There were, however, some differences between the expectations of males and females and between full-time and part-time students with respect to their perceived chances of obtaining work within four months of completing a first course at the tertiary level.

CHAPTER 9

THE RECRUITMENT OF GRADUATES AND DIPLOMATES

Introduction

The topic of recruitment was considered from three different aspects. These are (1) recruiting techniques, (2) recruiting style, and (3) recruiting difficulties. Each of these areas are discussed in turn in the following pages.

Recruiting Techniques

Information on the recruiting techniques used by employers is presented in Table 9.1. From Table 9.1 it is clear that employers have found the use of local and national newspaper advertisements the most successful technique for recruiting new graduates and diplomates. Almost two-thirds of the employers sampled stated that they used this technique most of the time. Sixty-eight per cent of the sample ranked the technique as the most successful means of recruiting new graduates and diplomates.

No other specific technique was considered to be the most successful by more than 10 per cent of the employer sample. The second category in the rank order was concerned with other techniques and included the use of professional consultants, the use of government gazettes and magazines, the use of centralized recruiting services (particularly in the government departments), and personal contacts made with the academic staff of various institutions.

A total of nine per cent of the sample rated the techniques 'visits to tertiary institutions' as the most successful technique. This technique (third in the rank order) was preferred mostly by the largest employers of graduates and diplomates.

The results suggest that most employers prefer to try to attract as wide a range of applicants as possible by using newspaper advertisements. One respondent commented that this technique was the most successful only because it was the most frequently used and that it was the easiest technique to use. These views might account for the relatively low proportions of employers who actually go to tertiary institutions and seek out prospective recruits.

However when the largest employers of graduates and diplomates were treated as a separate group a different rank order of techniques emerged. Two-thirds of the largest employers of graduates and diplomates stated that visits to tertiary institutions was the most successful technique. The second most successful technique was to advertise in professional magazines and journals (22 per cent). Just over 10 per cent of the sample believed that some other technique was the most successful. Obviously those organizations dedicated to a relatively high annual intake of new graduates and

Table 9.1 Recruiting Techniques Used by Employers: Total Group

Technique	Frequency of use			Most successful technique	
	Used most of the time %	Used some of the time %	Used infrequently or not at all %	Percent	Rank order
Advertise in the local and national newspapers	63	22	15	68	1
Advertise in professional magazines and journals	8	35	57	3	
Recruit through the University, College or Institute employment section	12	30	58	3	
Recruit by recommendations from existing staff	3	23	74	2	
Visit tertiary institutions for talks with prospective graduates and diplomates to generate preliminary list of applicants	13	15	72	9	3
Contact the Commonwealth Employment Service	2	22	76	–	
Contact the Professional and Executive Employment Office of the CES	1	24	75	1	
Rely on open applications for employment made by new graduates	8	38	54	–	
Use contacts made through the work experience programs of some courses	3	27	70	–	
Other	59	26	15	14 (100%, N = 85)	2

Note: The number of weighted cases responding for each technique listed ranged from 92 to 98. Only 26 responses were recorded for the 'other' category.

diplomates have a vested interest in publicizing their organization, and recruiting personnel as early as possible, preferably before graduation. It might then be inferred that the use of this technique should ensure early access to better quality graduates and diplomates. Extreme caution needs to be exercised in the interpretation of these results since the sample size for the largest employers was relatively small, containing only 11 employers.

No differences were detected between the response patterns for employers in the manufacturing industry division (N = 24) and the remainder of the sample for both the frequency of use and rank order of the recruiting techniques used. No comparisons were made between the other industry divisions because of the small number of respondents in each division. Since the overall patterns were quite marked there would be few significant differences between sub-groups.

Recruiting Style

Employers of Graduates and Diplomates

Employers were asked to indicate the degree of importance of different characteristics in the recruitment of new graduates and diplomates to their organization. The responses obtained from the total sample of employers are given in Table 9.2. The rank order of the characteristics that employers considered to be most important when selecting new graduates and diplomates is also shown. In order of importance (excluding the 'other' category in the list of characteristics) they were:

1 immediate 'value' to the organization;

2 the perceived future 'trainability' of the applicant for a managerial position;

3 specific areas of skill; and

4 the applicant's career objectives.

The 10 characteristics most frequently recorded by employers in the 'other' category were:

- presentability and interpersonal skills
- ability to work with people and get things done
- general presentation, verbal, written and in appearance
- determination to succeed
- attitude and job interest
- personal qualities ... drive, enthusiasm, leadership ability etc.
- to have realistic expectations re career path and advancement and to be willing to 'get their hands dirty'
- practical not theoretical approach
- personality
- ability to adapt to our requirements

Many of these characteristics refer to the personal qualities or attributes of graduates and diplomates. A more detailed analysis and discussion of the use of these

Table 9.2 Recruiting Style of Employers: Total Group

Characteristics	Degree of importance				Most important characteristic	
	Very important %	Important %	Not very important %	Not important %	Proportion %	Rank order
Type of tertiary institution attended (e.g. a University, a College or an Institute)	9	41	44	6	-	
Overall academic attainment in a tertiary course (e.g. pass, honours, average marks)	15	72	9	4	11	5
Specific areas of skill (as demonstrated by course majors, completed projects, etc.)	30	55	14	1	14	3
Range of subjects covered in a tertiary course (general well rounded course)	15	60	24	1	3	
General part-time, casual or full-time work history as a student (number of jobs, etc.)	9	42	37	12	1	
Immediate 'value' to the organization (immediately applicable skills and knowledge, no need for further training	30	42	24	4	25	1
Membership of professional organization	2	23	49	26	1	
Interests, hobbies, etc.	1	36	45	18	-	
Age	2	52	36	10	-	
Course attendance pattern (full-time, part-time, sandwich)	1	17	55	27	-	
Applicant's knowledge of the vacant position	13	41	36	10	-	
Recommendations of academic staff of the institution attended by the applicant	4	48	36	12	3	
Applicant's career objectives	37	54	8	1	11	4
Perceived future 'trainability' of applicant for a managerial position	40	44	13	3	18	2
Other	4	73	21	2	12	
					(100%, N = 85)	

Note: The number of weighted cases responding to each characteristic listed ranged from 95 to 98. Only 20. weighted cases were recorded for the 'other' category.

characteristics in the selection process are presented in Chapter 10, where the ratings of the qualities of new graduates and diplomates from the student, graduate, diplomate and the employer points of view are compared.

The work history of the new graduate or diplomate was regarded as being very important by only a small percentage of the employers. By contrast it will be shown in the next section that work experience was the most important 'recruiting characteristic' used by non-employers of graduates and diplomates (see Table 9.3).

The type of tertiary institution that an applicant (new graduate or diplomate) attended was rated as being very important by only nine per cent of the sample. The sources (university, CAE or overseas) of graduates and diplomates has been discussed in Chapter 7. It will be recalled that only 15 per cent of the employers sampled recruited new graduates and diplomates from particular tertiary institutions. Specific institutions, areas of study and reasons for their preference were nominated by few employers.

The recruiting style of the largest employers of graduates and diplomates was somewhat different to the pattern already described. The largest employers preferred equally the characteristics 'specific areas of skill', 'the applicant's career objectives' and 'perceived future trainability of an applicant for a managerial position' The major difference between the largest employers and the remainder of the sample was that none of the largest employers rated 'immediate value to the organization' as the most important characteristic.

This finding is not surprising since large employers could be more flexible in demanding a return for their investment. Non-employers, like the small employers of graduates and diplomates, saw the immediate value to the organization as a very important characteristic in the recruiting process.

It is of interest to note that the rank order for the most important characteristic for those organizations classified as being in the manufacturing division was the same as that for the total group. These data have not been included in this report.

For those employers who rated 'immediate value to organization' as the most important characteristic, the main reasons given for their choice were related to the size of the organization (generally small), the need to perform as soon as possible, and the high cost of additional training. For those employers who rated 'perceived future trainability of the appliant for a managerial position' as the most important characteristic, the main reasons given were related to the long-term benefit to the organization, the perceived stability seen by the organization of the position, for the replacement of senior staff as they retire, the need to upgrade senior positions, and that trainability implied flexibility which was seen as an important managerial quality. The characteristic 'specific areas of skill' was typically related to the specialist needs of an organization whereas the characteristic 'applicant's career objectives' was related to the type of operation the organization was involved in and the 'match' between the

Table 9.3 Recruiting Style of Non-Employers: Total Group

Characteristics	Degree of importance				Most important characteristic	
	Very important %	Important %	Not very important %	Not important %	Proportion %	Rank order
Specific areas of skill	55	39	6	-	21	2
Work experience	51	49	-	-	33	1
Immediate 'value' to the organization	37	50	13	-	15	3
Age	-	24	71	5	-	
Interests, hobbies, sporting activities	2	5	54	39	-	
Applicant's dress and general appearance	9	75	14	2	5	
Applicant's knowledge of the vacant position	20	59	16	5	2	
Applicant's confidence	21	66	13	-	9	4
Sex of applicant	6	30	30	34	-	
Applicant's career objectives	14	63	19	4	5	
Perceived future 'trainability' of applicant for a managerial position	16	61	18	5	7	
Other (N = 7)	71	29	-	-	3	
					(100%, N = 51)	

organization and the individual. The characteristic 'overall academic attainment in a tertiary course' was rated as the most important characteristic by employers because it served as an indicator of intellectual capacity and hence an ability to cope with further more specialized training.

Non-Employers of Graduates and Diplomates

The responses obtained from the sample of non-employers concerning the recruitment of middle level staff are recorded in Table 9.3 The characteristics 'specific areas of skill', 'work experience' and 'immediate value ...' were considered to be the most important. The 'other' important characteristics mentioned by non-employers were:

- stability
- practical skills and common sense
- energy
- motivation
- positive attitude
- leadership qualities

The following list of general comments, made by non-employers of graduates and diplomates on the type of person preferred for senior positions, elaborates on the three most important characteristics already mentioned.

- People with practical trade experience.
  Students are being educated for work positions by people with no work experience.
  Students should do a year in a chosen field before attending tertiary education.
- Senior positions are held by family.
- Small firm, only trade skill and common sense required.
- People who have completed apprenticeships and then taken further technical education to expand their knowledge in specific areas.
- We principally require applicants to have work experience of a like nature.
- ... innovative in the sense of being able to 'see a dollar profit' before the opposition.
- Appointments to senior positions usually come from staff within the company who have worked their way up through their respective departments.

The characteristics 'applicant's career objectives' and 'perceived future trainability ...' were much less important for the non-employers than for the employers of graduates and diplomates. This suggests that the non-employers perceive their senior staff (for example, the accountant, personnel officer, plant foreman) as being less mobile both within the organization and between organizations. By contrast the employers of graduates and diplomates value strongly 'the future trainability ...' of graduates and diplomates. Brown (1978) has reported that according to students, the main disadvantage of working in a small firm was 'poor promotion/development prospects'. It will be recalled from the discussion in Chapter 8 that 'advancement' was an area in which the 'expectations' of students were not met in a first job after completing a course. This in itself might be enough to discourage new graduates and diplomates from seeking employment with small organizations or organizations not requiring tertiary qualifications for a particular position.

Table 9.4 Employers' Preference for Experienced Graduates and Diplomates

Question: Does your organization employ experienced graduates and diplomates (i.e. with at least two years relevant work experience after graduation) in preference to new graduates and diplomates?	Total sample of employers %	Largest employers only %
Yes, all of the time	9	-
Yes, most of the time	50	10
Occasionally	27	45
No	14	45
Total %	100	100
Total N	95	11

Preferences

Employers preferences for new or experienced graduates and diplomates was also used as an indicator of recruiting style. This information is shown in Table 9.4. Employers in general expressed a strong preference for experienced graduates and diplomates. Typical areas nominated and reasons given are shown below.

- Need for expertise.
- Work experience promotes a more useful, practical bent in employees in contrast to new graduates and diplomates.
- Often have to work without supervision in a specialist area.
- ... the job requires practical experience in the field and such experience is not available internally.
- In the marketing area '... to have immediate sales potential'.
- In the civil and mechanical engineering areas 'More settled and responsible, less likely to leave, better value for $'.
- Greater value to company.
- In the EDP and marketing areas 'Requirement for experienced people on new projects'.
- An experienced graduate or diplomate is able to give a higher level of expertise to ... this applies in all fields.
- In the Accountancy field 'I find the cost of training inexperienced graduates is prohibitive'.
- In the Accountancy and Chemistry fields 'A new graduate is inexperienced and commands a salary unrelated to productivity'.

The pattern of preferences for the largest employers of graduates and diplomates was quite different. The large employers take a significant proportion of the new and inexperienced graduates and diplomates. During the sampling stages of the project it was determined that the 20 largest employers of graduates and diplomates in 1978 (from VIC colleges) employed over 25 per cent (or approximately 360 persons) of the total number of graduates and diplomates. Thus the remaining 576 employers in the effective target population (refer to Tables A.9 and A.10) accounted for less than 75 per cent of the 1978 output of graduates and diplomates. Based on these data and some of the

Table 9.5 The Employment of New and Experienced Graduates and Diplomates for the 1978-79 Financial Year

Ratio of new to experienced graduates and diplomates employed in 1978-79	Graduates %	Diplomates %
No new and no experienced[a]	20	21
No new and all experienced	14	19
Less than 25% new and above 75% experienced	22	21
About 50% new and 50% experienced	14	20
About 75% new and 25% experienced	7	3
Above 75% new and less than 25% experienced	7	7
All new and no experienced	16	9
Total %	100	100
Total N	89	89

[a] Approximately 20 per cent of the employers stated that they did not recruit graduates or diplomates for the financial year 1978-1979. Therefore recruitment would have taken place before this time period or in the three to four months between the end of the financial year (1978-1979) and the survey period.

findings listed in Chapter 7 it is clear that the individual small employer (for example, those who employ two or three graduates or diplomates a year) or the individual non-employer is very unlikely to employ significant numbers of new graduates or diplomates in the near future.

The approximate ratios of new to experienced graduates and diplomates employed during the 1978-1979 financial year are shown in Table 9.5. For that particular time period experienced graduates and diplomates were in considerable demand and should have experienced little difficulty in finding suitable employment. However, Table 9.5 presents data for the total group and does not distinguish between the larger employers of graduates and diplomates and the smaller employers. Again one would expect that the organizations who indicated that they employed greater than 75 per cent new (and less than 25 per cent experienced) or all new graduates and diplomates would most probably have been the larger employers. No direct information was obtained on past and future trends for these ratios in the light of changing economic conditions.

To summarize, the recruiting style of the large employers of graduates and diplomates is typified by the 'value added approach' (future trainability ..., long-term benefits) and the 'basic raw material approach' (specific areas of skills) postulated by the OECD (1977b). On the other hand small employers of graduates and diplomates are more likely to use the 'end product approach' (immediate value to the organization) and the 'value added approach'. The recruiting style of the non-employers, with regard to the recruitment of middle level personnel, can be described as mainly the 'basic raw material approach' but also the 'end product approach'.

Table 9.6 Difficulties Encountered by Employers with the Recruitment of New Graduates and Diplomates

Area in which qualification obtained	Employers not recruiting graduates and diplomates % of Total N	Employers recruiting graduates and diplomates: reported reasons for difficulties encountered							
		No difficulty %	Poor training in basic principles %	Lack of practical experience in course %	Course too diverse, lacked specific knowledge %	No supply of graduates or diplomates %	Unrealistic career expectations of graduate or diplomate %	Course too narrow and specialized %	Other %
Fine and Applied Arts	89	65	-	-	3	-	-	-	32
General Humanities	82	81	-	-	-	-	5	-	-
Social Sciences	68	78	-	4	8	-	4	-	6
Business and Administration	31	73	1	13	1	5	4	-	3
Applied Science and Technology	60	72	2	14	3	6	2	1	-
Paramedical	83	42	-	23	-	35	-	-	-
Engineering	40	77	2	4	-	-	13	-	4
Maths and Computer Science	66	81	-	5	-	5	6	-	3
Built Environment	83	83	2	-	2	13	-	-	-

Note: Not all employers recruited from all of the areas listed. The number of employers who answered each part of the question varied from 91 to 98 cases.

Any shift in the overall employment policy of the large employers, that is from the value added approach to the end product approach is likely to have a profound effect upon the employment prospects for new and in particular full-time graduates and diplomates. Conversely, a change in the attitudes and recruiting style of smaller employers, that is a much greater emphasis placed on the value added approach, would be of considerable benefit to the new inexperienced job seeker.

If the increases (noted in Chapter 6) in the size of the workforce and sales or budget allocation are likely to persist in the near future then a change in the recruiting style of the 'average employer' of graduates and diplomates might result. At least the projected trends for future increases in some areas of employment, reported in Chapter 7, for new graduates and diplomates lend some support to this argument.

Recruiting Difficulties

Information on some of the difficulties encountered by employers in recruiting new graduates and diplomates during the last three years and the relative proportions of employers not recruiting from particular areas of study is given in Table 9.6. The proportions of employers not recruiting graduates and diplomates ranged from 31 per cent from the Business and Administration area to almost 90 per cent not recruiting from the Fine and Applied Arts area. The proportions given for the various types of difficulty encountered often refer to very small numbers of employers. For example, in the case of the Fine and Applied Arts area only ten employers (11 per cent of the total number answering the question) are involved. The distribution of the percentages given in the first column of Table 9.6 is very similar to those distributions given in Table 7.9.

The majority of employers found little difficulty in recruiting suitable new graduates and diplomates during the past three years. For those employers who did encounter some difficulty, the most common problem reported was the 'lack of practical experience' within the course. In some ways this reported difficulty is contradictory to the notion of a new graduate or diplomate. One could hardly expect new graduates, especially those from full-time courses, to have had extensive practical experience. Some courses do have industrial experience as a substantial component of the total course load, but this cannot take the place of post-graduation work experience. It would appear that some employers, most probably the smaller employers, have unrealistic expectations of the capabilities of new graduates and diplomates.

This reported difficulty was not significant for all areas in which a qualification was obtained. Surprisingly the 'unrealistic career expectations of graduates or diplomates' was the most common difficulty reported for the engineering area. To a lesser degree it was reported as a problem for the areas of Business and Administration, General Humanities and Maths and Computer Science.

A few organizations listed other difficulties. Examples of some of the reasons given and the areas in which the difficulties were encountered were:

- In the field of Engineering 'Applicants seem to lack motivation and an appreciation of the needs of industry'.
- In the field of Accountancy, Economics, Chemistry 'No lack of applicants, lack of applicants of an acceptable standard'.
- In the field of Engineering 'Our engineers will generally be sales or service ... they seek design/developmental/research'.
- In the field of Accountancy 'Not suitable as a supervisor or manager'.
- In the field of Business and Administration 'General presentation and standard of literacy'.
- In the field of Applied Arts 'We have very special needs, todays courses aren't suitable'.

The inadequate supply of graduates and diplomates from the paramedical courses was a major difficulty for employers in this area. Specific courses listed for which major difficulties in supply have occurred during the past twelve months in particular, were Medical Technology, Speech Pathology, Occupational Therapy, Physiotherapy, Dietetics and Medical Records Administration.

Shortfalls in supply during the past twelve months have also occurred in the areas of Engineering (Mechanical, Civil, Industrial, Automotive, Safety), Accountancy, EDP (programming and systems analysis), Economics, Librarianship, Applied Science (Rubber and Plastics Technology, Metallurgy) and the Built Environment. Invariably the main reason given by employers was the lack of experience of the applicants.

Many employers have attempted to overcome these difficulties by the following procedures:

1 recruiting overseas and interstate;
2 persisting with advertisements;
3 employing part trained or new personnel;
4 using consultants;
5 providing inhouse training of 'new' graduates;
6 accepting lower quality graduates and diplomates;
7 offering bursaries;
8 making personal contact with tertiary institutions; and
9 changing the requirements of the position.

In summary, the most serious shortage in supply of both new and experienced graduates and diplomates has occurred in the paramedical area. Although some shortages of new graduates and diplomates have occurred in other areas, the most significant demand is for experienced personnel in the areas mentioned above. The inclusion of significant components of industrial experience in some tertiary courses does not guarantee that the graduates of these courses are any more attractive to employers

in the initial stages of employment. The demands of many employers appear to be related to the maturity, including personality, experience, industrial knowledge. etc., of the individual and not necessarily the specific levels of skill achieved with tertiary courses.

CHAPTER 10

ATTITUDES

Introduction

An important aspect of the study was an investigation of the attitudes of employers, students, graduates and diplomates. This involved the combination of the second and third terms of reference for the study, and provided a common element or common strand across all groups who were under survey.

Ratings of the qualities that new graduates and diplomates should possess at the time of completing their course were used as measures of attitudes.

Information on whose responsibility it was for the development of these qualities was gathered from the points of view of both the employers, and graduates and diplomates.

The Qualities of Graduates and Diplomates

The list of qualities used in the study was derived from an investigation conducted by Miller (1979) and viewed by the Project Advisory Committee as being representative of the attributes employers speak of when recruiting new graduates and diplomates. Since nearly all of the 14 qualities used in the questionnaire were ranked highly (very important) by the respondents in Miller's study, the use of means and standard deviations in this study as measures of importance were not considered to be appropriate. However, the average ratings for each quality and each group are shown in Table A.19 for interest. Instead the percentages who rated the possession of each quality or attribute as being very important were used. The percentages and a rank ordering of the variables are shown in Table 10.1.

It should be noted that students and graduates and diplomates were asked to rate each quality for its importance for overall success in a job in a field of training whereas employers were asked to rate the degree to which new graduates and diplomates should possess each quality. Thus the employers' ratings were not strictly comparable with those of the other groups under survey. The ratings given by employers for some qualities assumed a lower degree of importance than for students or graduates and diplomates. The differences in the percentages and the rank order for the quality 'ability to make decisions' serves as a good illustration.

There are a number of ways of examining the data shown in Table 10.1. First, the rank order of the attitudes of the two student groups can be compared. Secondly, the attitudes of the student groups can be compared with those of the two groups of graduates and diplomates. This type of comparison provides additional information on the

Table 10.1 Percentages who Rated Each Quality as Very Important

Description of quality or attribute	New students		Final year students		1978 Graduates/ Diplomates		1976 Graduates/ Diplomates		Employers' ratings for graduates		Employers' ratings for diplomates	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Ability to communicate with others	75	1	77	1	83	1	83	1	81	1	77	1
Ability to supervise junior staff	20	13	21	12	25	11	27	10	15	11	18	11
Ability to make decisions	71	2	71	2	66	2.5	69	2	32	9	25	10
Career adaptability	32	10	28	10	32	10	26	11	27	10	26	9
Specific skills	49	7.5	43	7.5	41	7.5	28	9	34	7.5	39	5.5
Ability in assigning priorities	37	9	35	9	44	6	37	7	36	6	39	5.5
Self motivation	63	3	63	3	66	2.5	68	3	74	2	74	2
Flexibility and receptivity to ideas	54	4	50	5	52	4	43	5	42	4	43	4
Industrial relations skills	17	14	15	14	11	14	9	14	3	14	5	14
General knowledge of related disciplines	28	11	23	11	21	12	17	12	9	12	8	12
Analytical ability	51	5.5	44	6	41	7.5	40	6	40	5	37	7
Fundamental research potential	21	12	18	13	15	13	13	13	8	13	6	13
Ability to work in a team	51	5.5	51	4	49	5	45	4	46	3	47	3
Ability to write reports	49	7.5	43	7.5	38	9	35	8	34	7.5	30	8

Note: The data for the student, graduate and diplomate groups are based on the 'educationally inexperienced sub-groups, namely those who were undertaking their first course at the time of the survey (students) and those who had graduated from their first course in 1976 or 1978.

expectations of students compared with the reality of the work environment experienced by the graduates and diplomates from two separate years. Thirdly, the attitudes of the employers might be regarded as a minimum level of expectation since they were rating the quality of new graduates and diplomates. In this way comparisons between this minimum level and again the attitudes of the graduate and diplomate groups provide some understanding of the apparent conflict in the expectations of the groups.

For all groups the 'ability to communicate with others' was rated as being the most important quality that a graduate or diplomate should possess for success in a chosen field of employment. Graduates and diplomates from both 1976 and 1978 rated this quality more highly than did either students or employers.

The 'ability to make decisions' received the second highest rank order for the students and graduates and diplomates but not for employers. Approximately 70 per cent of the students and graduates and diplomates rated this quality as being very important but only 32 per cent of employers rated it as very important for new graduates and only 25 per cent rated it as being a very important quality for new diplomates to possess. For employers the rank order was very low, at about ten out of a maximum of 14.

The quality 'self-motivation' was rated highly by all groups although the ratings by students were marginally lower than those of the employers. It will be seen from Table 10.1 nearly 75 per cent of employers said that it was very important for new graduates and diplomates to be self motivated (rank order 2).

In Miller's (1979) study 'self motivation' was highly valued by industry (highest rank order) but was not regarded as important a quality, that is, with as high a rank order, by academic staff within a sample of Polytechnics in the United Kingdom. University staff did however rank 'self motivation' highly. Academic staff in the sample of Polytechnics valued the quality 'flexibility and receptivity to ideas'. Industry rated this quality at a much lower level.

The qualities 'flexibility and receptivity to ideas' and 'ability to work in a team' received relatively high ratings from all groups in this investigation. Employers were more inclined to give these qualities a higher priority, with rank orders of 3 and 4 respectively, than did students and graduates and diplomates who assigned rank orders of approximately 4 and 5 respectively.

Employers more than students were inclined to rate an 'ability in assigning priorities' as a very important quality. This is a significant difference in attitudes since the employers ratings apply to new graduates and diplomates. It can be assumed that this quality would take a higher level of importance, from the employers' point of view, for the appointment of experienced graduates or diplomates.

It is interesting to note that while the 'specific skills' of new graduates and diplomates were highly regarded by employers, this quality assumed a much less

important role for the older (1976) group of graduates and diplomates. Similarly graduates and diplomates, as opposed to students, regarded an 'ability to write reports' as less important.

In general, there was a remarkable degree of similarity between the profiles of attitudes for the two student groups. New students were more inclined than final year students to use the 'very important' category on the rating scale although there were no real differences in the average ratings for each quality (see Table A.19).

There were small differences between the two graduate and diplomate groups. For the older (1976) group 'specific skills', 'ability in assigning priorities' and 'flexibility and receptivity to ideas' were less important than for the 1978 group.

Employers on the other hand had high expectations with respect to the quality 'self motivation', but a lower requirement for an 'ability to make decisions', at least in the initial stages of a new appointment. It could be argued that self motivation would imply flexibility, drive and responsibility for ones actions. If this were so then the two requirements would be contradictory. Another explanation might be that employers saw the 'ability to make decisions' at a different level of importance than did graduates and diplomates. Decision-making for employers might refer to company or policy level decisions. However, from the employers' point of view the most important qualitities for new appointees were clearly:

1 ability to communicate with others;

2 self motivation; and

3 a combination of two or more of the qualities listed.

A few organizations listed other qualities such as:

- intelligence
- practical application of a theoretical basis
- presentation
- commonsense

It is interesting to note that there were no noticeable differences in the qualities required of new graduates as compared to those required for new diplomates.

In another survey of the attitudes of employers to the employment of university and polytechnic graduates, Bacon et al. (1979) reported that a sample of large British employers valued highly the qualities (1) the ability to take responsibility, (2) powers of leadership, (3) the ability to get on with people, (4) the ability to learn, and (5) drive. One of the most surprising findings of their survey was the lack of importance given to the vocational training of graduates by the employers surveyed. From Table 10.1 it can be seen that the quality of 'specific areas of skill' received a lower degree of importance for all of the groups surveyed in this study than might have been expected.

Although there were no significant differences in the ratings for the top three qualities between large and small employers of graduates and diplomates, small

employers were more likely to value qualities such as 'specific skills' and 'flexibility and receptivity to ideas'. The large employers valued more highly in new appointees an 'ability to make decisions' and the 'ability to work in a team'. Other comments on the recruiting style of employers have been made in Chapter 9.

Overall, the rank orders of the qualities for the students and graduates and diplomates were similar. This could suggest that students have a very good understanding of the importance of different characteristics or qualities in the work environment. However, this is likely to be influenced by the response style of the students, because the restricted range of qualities used were couched in very general terms with no precise definitions provided. More precision in the description of the qualities and a greater range of qualities could produce a different answer.

In conclusion, several companies noted that the desirability of the qualities listed were entirely dependent upon the job being offered. A detailed investigation of the requirements, in terms of qualities desired, for particular jobs would not be likely to produce significantly different results if the same general qualities were used again. Nevertheless the use of more formal definitions might produce significant differences between groups.

Responsibility for the Development of Qualities of Graduates and Diplomates

The views of both employers and graduates and diplomates were gathered on the question of whose responsibility it was for the development of the qualities of graduates and diplomates which are listed in Table 10.2. Responses were required on a five-point rating scale with a scale value of one used if the attribute or quality was considered to be the total responsibility of the employer and a scale value of five used if it was seen to be the total responsibility of a tertiary institution.

Employers generally attributed most of the responsibility for the development of the qualities to the tertiary education sector. Half the mean values shown in Table 10.2 were over 3.5 (note range one to five, with a midpoint of three). The qualities included in this category were:

1 the ability to communicate with others;
2 self motivation;
3 flexibility and receptivity to ideas;
4 a general knowledge of related disciplines;
5 analytical ability;
6 fundamental research potential; and the
7 ability to write reports.

Table 10.2 Reponsibility for the Development of Qualities of Graduates and Diplomates: Mean Ratings for Employers and New Graduates and Diplomates

Description of quality attribute	Employers Mean	Graduates and Diplomates[a] 1976 Mean	1978 Mean
Ability to communicate with others	3.6	3.4	3.4
Ability to supervise junior staff	2.1	2.2	2.2
Ability to make decisions	3.3	3.1	3.2
Career adaptability	3.3	3.4	3.4
Specific skills	3.4	3.3	3.4
Ability in assigning priorities	3.1	2.7	2.8
Self motivation	3.5	3.1	3.1
Flexibility and receptivity to ideas	3.8	3.5	3.4
Industrial relations skills	2.2	2.4	2.6
General knowledge of related disciplines	3.8	3.6	3.7
Analytical ability	4.0	4.0	4.0
Fundamental research potential	4.2	3.9	3.9
Ability to work in a team	2.9	2.9	3.0
Ability to write reports	3.8	3.8	3.9
Total N	89	469	650

[a] Those who were awarded a first degree or diploma in 1976 or 1978. The scores for the total group were identical for almost all of the qualities listed to those of the two sub-groups listed.

However for the last four qualities listed above at least 20 per cent of the employers said that the development of these qualities was the total responsibility of the tertiary education sector (see Table A.20 for percentages).

On the one hand, four per cent of the employers stated that the development of 'self motivation' was the individual's responsibility. This category was not included in the questionnaire and these responses were written under the category 'other' on the questionnaire. On the other hand, however, over five per cent of employers believed that the development of self motivation was their responsibility (see Table A.20). These employers stated that this objective could be achieved by:

- giving responsibility
- regular staff meetings and conferences
- offering incentives and encouragement
- total involvement with the operation of the organization of graduate and diplomate appointees.

The only areas in which employers accepted a significant degree of responsibility were for the development of (1) the ability to supervise junior staff, and (2) industrial relations skills. Employers stated that this could usually be achieved by means of:

- on the job training
- in-service courses
- individualized instruction
- job rotation within the company
- direct supervision of work activities
- staff counselling and performance appraisals

Few employers rated these qualities as very important for the appointment of new graduates and diplomates (see Table 10.1).

By contrast the responses of the graduate and diplomate groups were closer to the midpoint of the five-point scale than employer responses. Even though the majority of the responses for graduates and diplomates were above the midpoint, this would indicate that graduates and diplomates viewed the education-employment process as an ongoing shared responsibility of both the employer and to a somewhat larger extent the education system. Employers on the other hand would appear to have somewhat higher expectations of the tertiary education system and less inclination to be responsible for the development of particular qualities of graduates and diplomates appointed to their staff.

The differences between the groups are slight and there is a high degree of similarity in the profiles. But the direction of the differences between the employers and the graduates and diplomates must remain a significant finding and, generally speaking, would seem to support comments made in Chapter 9 regarding the high expectations of some employers with respect to the capabilities of new graduates and diplomates.

It would be of interest to learn how academic staff would rate the importance of each quality for a graduate's success in his field of training, and the extent to which they would accept the responsibility for the development of each quality. One might hypothesize that academic staff would tend to regard the development of these qualities to be the responsibility of the employer. Miller (1979) found that there was substantial agreement between the views of industrialists and academic staff on the importance of these qualities for graduate engineers in the United Kingdom. He did not examine the question of the responsibility for the development of these qualities in graduates and diplomates.

It must be acknowledged that the examination of data which involve the comparisons of attitudes provides no information on the extent to which the qualities have been achieved as products of the education system or are developed by employers.

Formal Training Programs

Some indication of an employers' support for the ongoing personal development of new graduates and diplomates can be judged by the employer's use of and support for formal training programs. Such programs would exclude aspects of 'on the job' training that are likely to be a significant proportion of further training activities for some new graduates

Table 10.3 Formal Training Programs Supported by Employers

Program	Size of organization employing graduates	No time allowed %	Regularly up to 4 hrs per week %	Regularly up to 1 day per week %	Up to 2 days per year %	Up to 5 days per year %	Up to 2 weeks per year %	Greater than 2 weeks per year %	N
Formal induction program (Procedures, contracts, etc.)	Large	-	10	-	20	40	10	20	11
	Small	36	14	7	12	13	10	8	77
In-service or training programs offered by this organization (including conferences, etc.)	Large	-	-	9	-	27	37	27	11
	Small	29	10	2	5	16	22	16	80
Training programs offered by outside organizations (including conferences, etc.)	Large	30	10	-	-	30	20	10	11
	Small	13	10	4	8	37	24	4	81
Formal educational programs offered by Universities or or Colleges	Large	33	44	11	-	-	12	-	11
	Small	27	33	6	3	10	6	15	77

and diplomates but not for others. It is recognized that any study of further training requirements must consider individual differences among graduates and diplomates, the area of expertise required and the times when programs are offered to new graduates and diplomates. For example, many small employers would be unlikely to encourage new graduates and diplomates to undertake masters degrees which might require a half-day per week attendance at a tertiary institution. Such employers might allow one or two days per year for a new employee, who was a graduate or diplomate, to attend examinations or alternatively to allow annual holidays to be used as study periods prior to formal examinations.

Four types of training programs were identified in this investigation. They were:

1 formal induction programs;
2 in-service programs;
3 outside training programs (conferences, etc.); and
4 formal tertiary educational programs.

The amount of time allowed for new graduates and diplomates to attend these programs by the largest and the smaller employers of graduates and diplomates is detailed in Table 10.3.

Not unexpectedly the largest employers were more generous than the smaller employers with the time allowed for additional formal training programs. However, this support was mainly in the form of induction programs and in-service programs, those programs offered within the organization. The largest employers were also more likely to support regular attendance at formal tertiary educational programs (44 per cent), whereas the smaller employers, while indicating some support (33 per cent), often preferred a block release system (for example, five or 10 days per year) to a regular form of attendance. A further 35 per cent of the largest employers and 27 per cent of the smaller employers did not allow any time for new graduate and diplomate employees to attend formal programs offered at tertiary institutions.

The smaller organizations tended to make greater use of external training programs. However, 30 per cent of the large employers did not support this type of program.

The findings do not, however, describe the penalties to employees or the conditions for which time is allowed for employees to be involved with other training programs. It is reasonable to assume that an employer would not support an employee's involvement with training activities not directly related to a particular job even though the training activity might have some long-term benefit for the development of the individual. Moreover, no distinction was drawn between programs considered as essential to the performance of new graduates or diplomates in a job and those programs used as form of inducement or reward (for example, attendance at a conference).

In general, the findings of this study are in keeping with the general recruiting style of the two groups of employers identified in Chapter 9. The flexibility of recruiting style of the largest employers would seem to be supported by their endorsement of specific types of extra training programs offered within the organization. By contrast the smaller employers would appear to be more likely to recruit graduates and diplomates who were of 'immediate value to the organization'. Therefore they would not be likely to support extensive postgraduate training, least of all programs designed to develop the 'qualities' of employees.

CHAPTER 11

RELATED ISSUES

Issues Related to the Student Samples

The career plans and job seeking strategies of new and final year students were investigated within the context of the third term of reference for the study. The following questions were used to obtain the necessary information:

- Do you have a firm idea of the work you would like to do when you complete your course?
- If yes, please describe the specific fields in which you will seek employment
- What are your immediate plans when you complete your course? and, for final year students only,
- Up to now how many applications and enquiries have you made to companies or organizations about employment when you finish your course?

Ideas of Work

The information obtained from the answers to the first question are presented in Table 11.1. It should be noted that this first question was not concerned with the immediate plans of the students surveyed but related to their long-term ideas of employment. The immediate plans of the students surveyed are described in Table 11.3.

For the full-time students enrolled in their first course, more females than males indicated that they had a firm idea of the work they would like to do. On average just over half the full-time new students and almost three quarters of the full-time final year students (enrolled in a first course) indicated that they had a firm idea of the work they would like to do.

The pattern of results for the part-time students was noticeably different from that for full-time students. As might be expected a higher proportion of part-time students than full-time students indicated that they had a firm idea of the work they would like to do upon completing their course. The percentage of females responding in this way was lower than the percentages of males. The proportions of students who stated that they did not have a firm idea of the work they would like to do were generally similar for all groups and sub-groups. Part-time female new students in their first course were the only students to depart from this general rule.

The second question (given above) sought to obtain further information on the students' claims of firm ideas of work. Information on the students' knowledge of specific fields of employment is presented in Table 11.2. For those full-time new students who were enrolled in their first course and who indicated that they had a firm idea of their future work plans, only 10 per cent could substantiate the claim by providing a considerable description of the specific fields of employment.

Table 11.1 Ideas of Future Work: New and Final Year Students

Question: Do you have a firm idea of the work you would like to do when you complete your course?	Percentage response			
	Yes %	Undecided %	No %	Total N
New students enrolled in first course:				
Full-time male	50	43	7	381
Full-time female	56	37	7	337
Total full-time	53	40	7	718
Part-time male	73	18	9	79
Part-time female	56	32	12	80
All new students surveyed	56	36	8	1264
Final year students enrolled in a first course:				
Full-time male	69	24	7	431
Full-time female	77	18	4	298
Total full-time	73	21	6	729
Part-time male	84	9	7	145
Part-time female	75	21	4	32
All final year students surveyed	76	19	5	1346

Conversely 48 per cent of these new students provided an inadequate description of future specific fields of work. Final year students on the other hand were much more specific in their description of their future workplans and almost 30 per cent displayed a considerable knowledge. Only 15 per cent of the final year students who were enrolled in their first full-time course could not provide an adequate description of the work they would like to do when they had completed their first course. There were no significant sex differences in the replies received to this question.

Even though there would appear to be substantial differences between the work claims and actual knowledge of specific fields of employment, the results do not suggest a failure by new students to have formulated broad career plans. Many new students would genuinely believe that they have a sound knowledge of future areas of work. Hence, their level of aspiration would be high but work tasks could only be described in very general terms by the individual. Final year students, having been exposed to a series of learning experiences during the earlier years of a course and presumably to work-related tasks, would be more likely to have developed adequate career decision-making skills and have formed clearer views on specific work tasks.

The effects of experience obtained during a course upon job aspirations has already been discussed in Chapter 8, where it was noted that the level of aspiration of final year students was lower than the level for new students. Therefore it could be suggested that those final year students with little knowledge of the specific fields in which they would seek employment, and with above average job aspirations could be expected to be those less likely to find employment upon completion of a tertiary course.

Table 11.2 Students' Knowledge of Specific Fields of Employment

Sub-groups (Full-time students only)	Knowledge of specific fields of employment			
	Little %	Average %	Considerable %	Total N[a]
New FT students enrolled in a first course	50	41	9	380
All FT new students	48	42	10	579
Final year FT students enrolled in a first course	15	58	27	520
All FT final year students	13	58	29	760

[a] The students in this analysis were obtained only from those who had indicated that they had a firm idea of the work they would like to do.

Future Plans

Information on a student's immediate plans upon completion of a course are recorded in Table 11.3.

It can be seen that about 20 per cent of the new students stated that they had no firm plans for when they completed their first course. The proportion was significantly less for the final year students and only 6 per cent indicated that they had no firm plans. There were no differences between the proportions of final year and new students enrolled in a first course who expected to progress to postgraduate work. These proportions (approximately 10 per cent) are marginally higher than those for CAE graduates who, in the past, on completion of a first course, have progressed to further studies (see GCCA, 1979). Thus, CAE students do not appear to have unrealistic expectations of undertaking future postgraduate work on completion of their course.

There is, however, another noticeable feature in the data shown in Table 11.3. Only just over half of the full-time new and full-time final year students in their first course (53 per cent and 57 per cent respectively), planned to get a job in their field of training as soon as they had completed their course. Further, the range of options provided as answers in the questionnaire attracted a noticeable number of responses. For example, for final year students 12 per cent of the responses were for 'other' reasons not listed as alternatives. The type of reason given in this particular category included travel and work overseas, travel and return to full-time study, domestic duties then full-time work, or working for an employer to which the student was bonded.

Part-time new students who were enrolled in their first course differed in their views from the comparable final year group. The new students as compared with the final year students were less inclined to plan to remain in a current job after graduation, and more inclined not to have made firm plans for employment.

Table 11.3 The Immediate Plans of Students on Completion of a Course

	New Students				Final Year Students			
	Enrolled in a first course: Full-time %	Part-time %	Total %	All new students surveyed %	Enrolled in a first course: Full-time %	Part-time %	Total %	All final year students surveyed %
Continue study and do postgraduate work	9	11	9	9	10	5	9	10
Get a job in my field of training as soon as possible	53	18	46	42	57	14	48	40
Take a break and travel for about 6 months then worry about employment	7	4	7	6	3	1	3	3
Try and get any kind of full-time job	5	-	4	3	4	2	4	4
No firm plans yet	20	15	20	18	6	4	6	6
Continue in my current job (if PT or sandwich student)	1	29	6	12	6	58	16	22
Get another job in my field of training (if PT or sandwich)	-	9	2	3	2	9	3	3
Other plans	5	14	6	7	12	7	11	12
Total	100	100	100	100	100	100	100	100
Total N	714	153	914	1261	729	175	908	1349

Note: The number of full-time and part-time students do not tally with the total number of students shown because of missing data for the attendance pattern variable.

Table 11.4 Number of Job Applications and Enquiries Made by Final Year Students

	Number of applications and enquiries				Total N
	None %	Up to 5 %	5 to 10 %	more than 10 %	
Applications made by:					
FT students enrolled in a first course	36	45	11	8	672
PT students enrolled in a first course	61	17	8	14	150
All final year students surveyed	45	36	10	9	1223
Enquiries made by:					
FT students enrolled in a first course	26	42	18	14	677
PT students enrolled in a first course	52	31	7	10	147
All final year students surveyed	36	36	15	13	1211

Job Seeking Strategies

In Table 11.4 information is recorded on the number of applications and enquiries made to organizations by final year students about employment when they finished their course.

Approximately one-quarter of the final year full-time students enrolled in their first course had not, at the time of the survey, made any enquiries regarding employment at the completion of the course. Over one-third had made no formal applications for work. These groups would have included the bonded students, those who intended to do postgraduate work, perhaps those who intended to travel, and those who had no firm plans for when they completed their course (see for example Table 11.3). The majority of the full-time students had made up to five applications and enquiries regarding future work. But a significant proportion had made greater than five enquiries (32 per cent) or greater than five applications (19 per cent).

These data were obtained in August-September 1979 or approximately three months before the majority of tertiary students would have completed a course of study. In addition, the data represent job seeking activities for 1979 only and might or might not be typical of past or subsequent years. Although the changing employment market has created some difficulties for the graduate or diplomate seeking employment, it is unclear what effect this would have on job seeking activities as such. However, it is reasonable to assume that final year students would attempt to organize jobs well in advance of actually completing their studies during periods of overall employment difficulties. Employment officers in CAE's, universities and companies would probably support this general assumption.

The preceding analyses have also assumed that the education is undertaken for the purposes of obtaining employment by all VIC students. Some students would vehemently refute such an assumption and claim that tertiary studies were undertaken for other than vocational reasons. To quote from a letter received from one diplomate:

> My completion of a Design Diploma was a result of a natural curiosity in the Art and Design Area. At no stage was the course taken for vocational reasons. This was despite the sincerest efforts on the part of my lecturers to convince me otherwise ...

This suggests that appropriate policies should be adopted as a basis of educational planning in which the educational system must cater for both the personal needs of individuals as well as for the needs of employers. Moreover, if the personal needs of the individual, whether vocationally oriented or not, are given the highest priority as an educational objective then the unemployment rates for graduates and diplomates, based on the numbers obtaining employment at the end of a course, are of doubtful value. Such a measure would only be appropriate in a fixed and narrow supply and demand situation.

Issues Related to Employers and Non-Employers

Involvement with the Education System

The development of courses at both the tertiary and further education (TAFE) levels have to some extent been dependent upon close co-operation between the staff of educational institutions and some employers. Course feasibility studies have served to involve a range of employers with the education sector but this type of contact has sometimes been so superficial as to serve little useful purpose in identifying long-term need. Employers by and large view the role of the education system, particularly at the tertiary level, in terms of cost to themselves. This view has been demonstrated to some extent in the survey results reported in Chapter 9.

Measures of the extent and the type of involvement employers and non-employers have had with the tertiary and further education systems and the extent to which employers would be likely to be involved with these types of institutions in the future were obtained by a series of questions. The data collected are summarized in Table 11.5.

From Table 11.5 it can be seen that only 40 per cent of employers were involved in the design and implementation of tertiary level courses and an even lower proportion, 27 per cent were involved in the design of courses in the technical and further education sector. The largest employers were more likely to be involved in these course development activities than were the smaller employers of graduates and diplomates. In general, relatively few employers were involved in the evaluation of tertiary level courses (37 per cent).

Table 11.5 Involvement with the Education System by Employers

Question: Is your organization or a representative from your organization involved in:	Percentage response			
	All employers		Largest employers	
	Yes %	No %	Yes %	No %
the design and implementation of new courses in the tertiary education sector?	40	60	73	27
the evaluation of existing courses in the tertiary education sector?	37	63	82	18
the design and implementation of courses in the Department of Technical and Further Education?	27	73	36	64

Note: Total number of employers = 97
Number of largest employers = 11

It can be assumed that the employers of graduates and diplomates would have a general understanding of the tertiary education sector and the technical and further education sector. However, non-employers are likely to have a variety of impressions concerning the post-secondary education systems. The variety of types of contact and the degree of involvement of the non-employers surveyed with the post-secondary area of education are reported in Table 11.6.

It will be seen from Table 11.6 that the non-employers had a higher degree of contact and involvement with technical and further education colleges than with tertiary institutions. For example, 34 per cent of the non-employers had frequently employed apprentices, 18 per cent frequently had employees enrolled in technical courses but only 5 per cent frequently had employees enrolled in university or CAE courses. Non-employers were more inclined to attend an open day or talk at a technical college than at a college or university.

It should be noted from Table 11.6 that very few of the organizations included in the sample had a representative on a committee at a university, CAE or technical college. These results would seem to indicate that non-employers had very little direct involvement with the technical and further education system and even less with the tertiary system. Thus their knowledge of the two systems would most likely be derived from other forms of general contact. Any attempt by the tertiary sector to establish an employment market for CAE graduates and diplomates with non-employers should therefore be preceded by substantial public relations activities.

A selection of comments made by non-employers and quoted below illustrate the problems facing the tertiary sector in this regard.

Table 11.6 Involvement with the Education System by Non-Employers (N = 61)

Question: Has your company or an employee of your company ever:	Percentage response: Yes frequently %	Yes occasionally %	No never %
employed students from a university or CAE on a full-time or part-time basis	8	39	53
employed apprentices enrolled in a course at a technical college?	34	28	38
contacted a university or CAE about employing a graduate or diplomate?	2	13	85
made a submission concerning the development of a course at a technical college?	2	16	82
attended open days or talks held by a university or CAE?	-	13	87
attended open days or talks held by a technical college?	7	27	66
enrolled in a course at a university or CAE?	5	38	57
enrolled in a course at a technical college?	18	48	34
acted as a member of a committee at a university or CAE?	-	5	95
acted as a member of a committee at a technical college?	-	15	85

Table 11.7 Future Involvement with the Education System by Employers (N = 76)

Question: ... Would your organization be prepared to:	Percentage response Yes %	No %
make a submission on the need for a new course in a specific area?	36	64
send a representative to a course advisory committee meeting at a university, college, institute or technical college?	70	30

- Manufacturing industry needs dedicated men and women, who are prepared to learn the trade ... Too often our floor managers see a university education as a disadvantage.
- Should relate teaching to a more practical approach, so adjustment from college to industry is not so great.
- It appears at times that not sufficient emphasis is placed on practical view ...
- ... We are over educating people in theory and not paying anywhere near enough attention to practical skills.
- In the field of commerce many basics of accounting are omitted, there are far too many theorists who unfortunately lack the essential practical experience required in private industries, consequently no medium or small company can afford the salary that degree or diploma graduates require in return for a theoretical knowledge.
- ... Too much politics and not enough practicalability, e.g. students unions and airing of academics political convictions.
- On completion of matriculation should obtain practical experience before continuing on with courses at University or College of Advanced Education.
- Cost of training, no loyalty, career prospects conflict ... high risk future employee.
- Contend good primary education is being neglected in favour of tertiary.

An increased level of involvement, of non-employers in the review of current courses might be one way of encouraging the expansion of the employment markets for graduates and diplomates. It is recognized that such an approach is not likely to have a significant impact on very small organizations with less than 25 employees, and is more likely to be of benefit to the larger traditional non-employers. In fact 70 per cent of the organizations in the employer sample (see Table 11.7) said that they would be willing to send a representative to a course advisory committee at a university, college or technical college. The type of representatives employers would send to course advisory committees are shown in Table 11.8.

Only 36 per cent of the employers were willing to make a submission on the need for a new course in a specific area.

Other Problem Areas

Relatively few employers, approximately one-third of the total sample, listed areas and gave details of specific topics which they believed should be included or emphasized in

Table 11.8 Type of Representative for Course Advisory Committees Nominated by Employers (N = 53)

Type of representative	Number of responses[a]
Managing Director or Chief Executive Officer	20
Section Manager or, for example, Chief Engineer	34
Personnel Manager	14
A middle level person from the appropriate area	13
Any officer who was available at the time	2
Other	5

[a] Employers were asked to nominate all appropriate representatives.

current courses. The most common areas of study commented on were Engineering and Accountancy. The type of general comments made and deficiencies referred to were:

- lack of management training
- lack of communication skills
- need for administrative skills
- more practical orientation
- need for marketing skills
- need for data processing skills

The other areas listed and their deficiencies have not been reported because of the small number of instances in which they were listed and the wide variety of information given.

In general, the response to this area of investigation was disappointing. One might be tempted to conclude that there is little to substantiate claims that current courses are not fulfilling the needs of employers. However, a higher degree of involvement of employers and non-employers with the design, implementation and evaluation of courses at both the technical and further education and tertiary levels would seem the most appropriate strategy for examining not only employers needs in the specific skill areas, but also for identifying those intangible 'qualities' of graduates and diplomates that employers seek.

CHAPTER 12

SUMMARY AND CONCLUSIONS

This study was concerned with an investigation of the views, expectations and experiences of several groups of people. The groups were: new and final year students who were enrolled in 1979 in colleges of advanced education affiliated with the VIC, graduates and diplomates who were awarded a degree or diploma in either 1976 or 1978 by the VIC or colleges of advanced education affiliated with the VIC, and employers and non-employers of graduates and diplomates. The main aims of the study which were mentioned in the four terms of reference were to determine what proportion of these graduates and diplomates obtained satisfactory employment, to examine the views and attitudes of employers and non-employers concerning the recruitment of graduates and diplomates, and to examine the attitudes of graduates, diplomates and students towards employment and the means by which they adjusted or accommodated their expectations to opportunities which were available to them.

A research matrix was designed to describe first the groups surveyed by questionnaire in late 1979 and second the key research areas which were mentioned in the terms of reference for the study. The results of the surveys have been presented in the form of a discussion around each of the key research areas.

The presentation of the results for this study, Part Two of this report, began with a discussion of the background information obtained from each of the groups surveyed. With respect to the distributions by age and sex of the students, graduates and diplomates it was found that the younger students were over represented in the student samples and that the ratio of males to females in the samples had decreased marginally over recent years. Certain changes were also noted in the transition from secondary school to post-secondary studies. Students were more likely than graduates and diplomates to have undertaken periods of work, of greater than three months, before commencing post-secondary studies. No noticeable changes were noted between the samples of students, graduates and diplomates in the type of secondary school which was last attended before having enrolled in post-secondary studies.

While the findings have provided a limited picture of changes in the types of tertiary students who had enrolled in colleges affiliated with the VIC, the analysis of the educational history and educational progression of the students, graduates and diplomates surveyed has provided information which should be of value to educational planners. This study investigated in detail two quite different groups of students, the educationally experienced and the educationally inexperienced. Approximately 70 per cent of the new and final year students surveyed were classified as educationally inexperienced in that they were enrolled in their first post-secondary course at a college

of advanced education. On average a further 15 per cent of the students surveyed had discontinued a first post-secondary course and the remaining 15 per cent had completed some other post-secondary course. These two groups were classed as educationally experienced students. Of the graduates and diplomates who were surveyed, 11 per cent of the 1978 group and 19 per cent of the 1976 group had discontinued a first post-secondary course. Only 27 per cent of those graduates and diplomates surveyed who had completed a first post-secondary course at any level had also completed a second course at the degree level. However, for the final year students surveyed this trend to the upgrading of qualifications was more pronounced. Sixty-four per cent of the final year students who had completed a first post-secondary course, had enrolled in a degree level course at the time of the survey. These results have tended to support the findings of other researchers that there has been a noticeable shift towards enrolments associated with upgrading previous qualifications, and, in particular, the upgrading of qualifications to a degree level.

The analyses carried out in this investigation to describe educational progress were limited in their use in that no extensive comparative data were available. If comparative data of this type were available then some hypotheses could be formulated with respect to the complex relationship between the types of educational background and changes in the academic progression of tertiary students. In recent years tertiary institutions have encouraged applications for enrolment from the educationally experienced groups in the belief that the educationally experienced groups would perform academically as well as, if not better than, the students who had progressed straight from secondary school. Research in this area has generally been limited to an investigation of individual courses.

Any research into the changing patterns of enrolment and progression through post-secondary courses, would need to consider not only changes in retention rates at the secondary school level but also changes in economic conditions. The limited background information obtained from the employers and non-employers surveyed demonstrated that over the last three years there had been a noticeable increase in the budgets or total turnover for many of the organizations surveyed but this increase generally had not been accompanied by an increase in the size of their workforce. Any significant growth in either the sales figure or budget allocation, or the workforce was generally limited to large organizations that employed graduates and diplomates. Some government departments were exceptions to this general finding.

Although the employment opportunities for graduates and diplomates had been very satisfactory up to mid-1970, the evidence presented in this report would suggest that the current situation where periods of unemployment of up to six months are not uncommon for many new graduates and diplomates, is likely to persist into the near future. Only a few of the employers surveyed indicated that their rate of recruitment of new graduates

and diplomates would increase noticeably during the next five years, with an assumed real increase of two per cent per annum. There was some evidence to suggest that the current high demand would persist for graduates and diplomates from the areas of Business and Administration, Paramedical, and Mathematics and Computer Science. The technique used to assess the likely demand in the surveys of employers was highly speculative being dependent upon an assessment of economic development and other changes within Australia. As little as five years ago an over-supply of engineers was predicted for the 1980s. More recent comments by members of the Institution of Engineers have suggested that there is likely to be a severe shortage of engineers during the next ten years. These predictions have been based upon the projected areas of development and expansion within the private sector. However, this predicted demand for graduate engineers was not detected from the surveys for this project which were carried out in 1979.

The survey of non-employers of graduates and diplomates revealed that future employment opportunities for new graduates and diplomates would be very limited within such organizations. Less than 10 per cent of non-employers said that they would employ a graduate and only 16 per cent said that they would employ a diplomate within the next five years. Just over one-third of the non-employers who were surveyed had employed a graduate or diplomate in the past, but only in a part-time or consulting capacity. The non-employers, like the small employers of graduates and diplomates had a different recruiting style to that of the larger employers, in that they preferred new employees at the middle management or supervisory level who would be of immediate value to the organization. The large employers were more flexible in their recruiting style and preferred new graduates and diplomates with specific areas of skill, people with specific career objectives and people who could be trained for future managerial positions. The largest employers of graduates and diplomates also differed from the small employers and non-employers in that they preferred to use different recruiting techniques. The largest employers preferred to visit tertiary institutions while the other employers and non-employers found that the use of advertising in newspapers was a successful technique to recruit new graduates and diplomates or employees for middle level positions.

Much of the preceding summary refers to the second term of reference of this study which was concerned with the views and attitudes of employers and non-employers towards the recruitment of graduates and diplomates. It has been noted that the patterns of employment of graduates and diplomates have changed during the past five years and are likely to be somewhat different to those that existed in the 1960s and early 1970s. These changes were reflected also in the unemployment rates of graduates and diplomates which were obtained from the surveys of samples of 1976 and 1978 graduates and diplomates. These data referred to the first term of reference for this study.

Considerable differences were found in the time taken to find full-time employment between graduates and diplomates of different courses who were not employed full-time at the end of their course. On average, approximately 45 per cent of the 1976 and 1978 graduates and diplomates took one month or less to find a full-time job. A further 25 per cent, on average, took between two and three months. In addition, 23 per cent of the 1978 sample and 25 per cent of the 1976 sample took greater than four months to find a full-time job. Ten per cent of the 1978 sample and three per cent of the 1976 sample had never been employed in a full-time job after completing a degree or diploma. Those graduates and diplomates in this category were mainly from the areas of Art and Design, General Humanities, Social Science, Medical Technology and Chemistry. These findings when considered with the projected future needs of employers for graduates and diplomates from specific areas of study do not present a bright picture for the future employment of new graduates and diplomates from the above mentioned areas. However, graduates and diplomates from the Humanities and Social Science fields have been mainly employed in the past in the areas of public administration and community services. Changes in government funding and policies with respect to these two areas of employment would alter quite considerably the future employment prospects for graduates and diplomates from the areas of General Humanities and Social Science.

The index used to examine unemployment, namely the actual time taken to find a full-time job would appear to provide a more appropriate measure than the reported proportions of unemployed graduates and diplomates at specific reference dates because it could take into account the different times at which students completed their courses, and, more importantly, it could take into account the different job-seeking strategies used by final year students. Thus periods of time used for activities other than job-seeking, for example, travel and holidays, could be removed from calculations and a more accurate picture of employment difficulties experienced by new graduates, diplomates and students could be obtained.

The first term of reference for this study also referred to the issue of satisfactory employment. In this study two approaches were used. The first approach, as described previously, sought information related to the time taken to find a full-time job. In addition, information was obtained on the time taken by graduates and diplomates to find full-time employment in their field of training. As might be expected the average time taken by graduates and diplomates from 1976 and 1978 to find a job within the field of training was longer than the average time taken to find any job. For both these types of jobs, the 1976 sample of graduates and diplomates took about one month longer to find jobs than did the 1978 graduates and diplomates who were surveyed. It should be noted that the parameters which were used to determine if a particular job was in or out of a field of training were broad and further research in this area, to examine concepts such

as under-employment, would require a careful classification of the job along the lines of the detailed system used by the Graduate Careers Council of Australia to describe the type of work undertaken by graduates and diplomates.

In a second approach, broad measures of job satisfaction were used in the surveys of graduates and diplomates to determine the overall level of job satisfaction experienced in a first job after graduation. On a rating scale of one to seven, where a value of one represented an extremely low level of job satisfaction and a value of seven represented an extremely high level of job satisfaction, average ratings of 4.7 and 5.0 were reported for graduates and diplomates who were awarded their first degree or diploma in 1976 or 1978 respectively. These average values represented a rating of mostly satisfied on the scale which was used. However around 20 per cent of both the samples of graduates and diplomates who had completed their first degree or diploma indicated low levels of job satisfaction with their first job. There was some evidence to suggest that those graduates and diplomates who had some work experience prior to their first job were likely to express a higher level of overall job satisfaction in their first job than those who had no work experience prior to graduation.

It could be argued that overall average values of job satisfaction for a first job, after having completed a first degree or diploma, would not accurately reflect real changes in the employment conditions for new graduates and diplomates. Therefore, in accordance with the fourth terms of reference for this study, an examination of the job aspirations and expectations of students, graduates and diplomates and an investigation of the ways in which they adjusted or accommodated their expectations to the opportunities available to them, were carried out.

A system was devised to examine an individual's hierarchy of values related to levels of aspiration, expectation and tolerance. It was found that students had a much higher level of aspiration for a range of job characteristics than graduates or diplomates. The most important job characteristics in an individual's hierarchy of values were intrinsic characteristics such as 'working with people', 'use of skills' and 'responsibility'. These characteristics generally remained the most important characteristics for the level which students, graduates and diplomates expected to achieve in a first job after graduation and for the lowest level tolerated in a first job after graduation. Graduates and diplomates, however, valued highly the characteristic 'job security'. The hierarchy of values for the graduates and diplomates sampled were compared with the levels actually achieved in a first job after graduation and for a current job. The first full-time job achieved by the graduates and diplomates after having completed a first degree or diploma was below their level of expectation for all of the job characteristics used in the surveys. However, with an increase in time the level of achievement in a current job approached the level aspired to for some characteristics and approached or exceeded the level aspired to for other

characteristics. As might be expected the rank order of importance for the different job characteristics also changed. For example, the job characteristic 'responsibility' received the highest rank order of importance for a current job for the 1976 graduates and diplomates after it was ranked approximately fourth in importance in the different levels in the hierarchy of values by the other groups.

It would appear from these results that graduates and diplomates, while having accepted initial jobs after graduation below their level of expectation, were able to achieve jobs closer to the ideal level in their system of values through job mobility and the passing of time. It should be noted, however, that these comparisons were made between an ideal level of achievement, held at the time of completing a first degree or diploma, and the current level of achievement. No attempt was made to relate the number of jobs or changes in the type of job that graduates and diplomates had held after graduation to the possible changes in an individual's system of values.

With respect to the job expectations of the two student groups sampled, it was found that approximately equal proportions (64 per cent) of new and final year students reported that they had very good or at least good prospects of finding full-time work in their field of training within four months of completing a course. Around 10 per cent of the students surveyed reported that their prospects, in this respect, were hopeless.

The job expectations of students were also considered under the third term of reference for the study which required an investigation of the attitudes of graduates, diplomates and students towards employment. Seventy-three per cent of the full-time final year students and 53 per cent of the full-time new students claimed to have a firm idea of the work they would like to do on completion of a course. Of those new and final year students who claimed to have a firm idea of the work they would like to do, only 10 per cent of the new students and 29 per cent of the final year students displayed a considerable knowledge of specific fields of work. Just under 60 per cent of the final year students and just over 40 per cent of the new students displayed an average knowledge. No attempt was made to analyse these findings by the different areas of study covered by the surveys.

It could be expected that the knowledge of specific areas of future employment would vary considerably between the students of different courses and for different age groups. However the findings do raise some doubts as to the effectiveness of programs such as work experience and career exploration (as distinct from career plans) in increasing an individual's level of knowledge of specific work roles. In addition they lead to the questioning of the general vocational nature of colleges of advanced education.

Attitudes towards employment were also investigated by means of asking each of the groups surveyed to rate the importance of a set of qualities of new graduates and diplomates. Graduates, diplomates and students rated the 'ability to communicate with others' as being the most important quality a graduate or diplomate should possess for

success in a chosen field of employment. The quality 'the ability to make decisions' was the second most important. By comparison, employers also ranked 'the ability to communicate with others' as being the most important but considered the 'ability to make decisions' as being far less important (rank order of approximately 9). Employers also valued highly qualities such as 'self motivation', 'the ability to work in a team' and 'flexibility'. Other results from the surveys would suggest that employers have relatively high expectations of the education system for the development of the range of qualities which were included in the questions in the surveys.

A practice which could increase an employer's understanding of the objectives of tertiary level courses and hence modify an employer's expectations of new graduates and diplomates would be through greater involvement by the employer in the course planning and evaluation process. While 40 per cent of the employers surveyed reported that they were involved in the design and implementation of tertiary level courses, many of these were from large organizations, who, in general, were much more flexible in their style of recruitment of new graduates and diplomates than were the smaller employers. Seventy per cent of the employers stated that they were prepared to send a representative to a course advisory committee at a CAE or a technical college, but few (36 per cent) were prepared to make a submission on the need for a new course in a specific area.

As might be expected the non-employers of graduates and diplomates had a higher degree of contact with technical and further education colleges than with tertiary institutions. Contact with tertiary institutions for non-employers was mainly limited to having a staff member enrolled in a tertiary level course or as a result of having employed students from a college or university.

In conclusion, this study has encountered several problems in the investigation of the education and employment of graduates and diplomates. First, this report has noted the difficulties encountered in obtaining a suitable classification of courses of study so that sound comparisons could be made between broad areas of study. Secondly, the study has identified certain difficulties in the definition and measurement of rates of unemployment for the graduates and diplomates. Thirdly, the report has noted the difficulties that were encountered in gathering relevant background information and in the preservation of the confidentiality of information concerning academic progress of students, graduates and diplomates. Nevertheless while this study was limited to an investigation of students, graduates and diplomates of colleges affiliated with the Victoria Institute of Colleges, the problems it examined would not be unique to Victoria and their further investigation would be desirable through similar studies mounted on a national basis.

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APPENDIX I

DETAILED STATISTICS

Table A.1 Distribution of New Student Enrolments by College: Population Statistics

Area of study (and level of award)	College													Total
	01	02	03	04	05	06	07	08	09	10	11	12	13	
Art & Design (Common)	40	56	175	-	90	-	100	91	293	79	151	-	22	1097
Humanities & Social Sciences (Common)	113	116	226	101	268	-	252	90	113	500	-	-	58	1837
Accountancy, Business & Admin. (Common)	75	142	649	328	352	-	275	264	646	464	-	-	109	3304
Chemistry (Common)	1	-	-	37	-	-	-	25	-	-	-	-	18	81
Pharmacy (Degree)	-	-	-	-	-	-	-	-	-	-	-	118	-	118
Other Applied Science & Technol. (Common)	39	43	90	83	77	-	-	67	164	214	-	-	-	777
Medical Technology (Degree)	-	-	-	-	-	-	-	-	89	-	-	-	-	89
Other Paramedical (Degree)	-	-	-	-	-	254	-	-	-	-	-	-	-	254
Other Paramedical (Diploma)	-	-	-	-	-	95	-	86	94	-	-	-	-	275
Civil/Structural Engineering (Common)	40	6	44	26	-	-	-	-	-	46	-	-	-	162
Mechanical/Production Engineering (Common)	-	7	43	19	29	-	-	-	-	84	-	-	-	182
Other Engineering (Common)	-	7	85	34	-	-	-	-	22	76	-	-	-	224
Built Environment (Degree)	-	-	-	-	-	-	-	-	97	-	-	-	-	97
Built Environment (Diploma)	-	-	-	-	-	-	-	8	176	-	-	-	-	184
Maths & Computer Science (Degree)	-	-	-	47	-	-	-	-	258	-	-	-	-	305
Maths & Computer Science (Diploma)	-	-	-	-	-	-	-	-	50	-	-	-	-	50
Total														9036

Table A.2 Distribution of Final Year Student Enrolments by College: Population Statistics

Area of study (and level of award)	College													
	01	02	03	04	05	06	07	08	09	10	11	12	13	Total
Art & Design (Degree)	–	4	35	–	–	–	–	–	35	15	9	–	–	98
Art & Design (Diploma)	37	27	48	–	–	–	85	70	206	42	83	–	32	630
Humanities & Social Sciences (Degree)	–	29	175	59	60	–	–	36	–	161	–	–	28	548
Humanities & Social Sciences (Diploma)	79	21	8	–	9	–	30	–	65	9	–	–	10	231
Accountancy (Diploma)	22	27	56	93	11	–	39	72	3	104	–	–	–	427
Business & Admin. (Degree)	16	14	122	86	16	–	30	42	278	130	–	–	28	762
Business & Admin. (Diploma)	1	8	72	–	–	–	9	1	28	–	–	–	–	119
Chemistry (Degree)	13	–	–	15	–	–	–	24	44	19	–	–	12	127
Chemistry (Diploma)	–	1	–	–	–	–	–	–	4	8	–	–	–	13
Pharmacy (Degree)	–	–	–	–	–	–	–	–	–	–	–	111	–	111
Other Applied Science & Technol. (Degree)	2	27	32	44	18	–	–	54	104	37	–	–	–	318
Other Applied Science & Technol. (Diploma)	17	6	17	–	3	–	–	–	84	21	–	–	–	148
Medical Technolology (Degree)	–	–	–	–	–	–	–	–	40	–	–	–	–	40
Medical Technolology (Diploma)	–	–	–	–	–	–	–	–	48	–	–	–	–	48
Other Paramedical (Degree)	–	–	–	–	–	204	–	–	–	–	–	–	–	204
Other Paramedical (Diploma)	–	–	–	–	–	29	–	26	109	–	–	–	–	164
Civil/Structural Engineering (Degree)	27	6	19	14	–	–	–	–	40	54	–	–	–	160
Civil/Structural Engineering (Diploma)	5	2	37	24	14	–	–	12	15	36	–	–	–	145
Mech./Prod. Engineering (Degree)	–	–	8	16	–	–	–	–	28	52	–	–	–	104
Mech./Prod. Engineering (Diploma)	13	7	29	17	–	–	–	7	16	36	–	–	–	125
Other Engineering (Degree)	–	–	24	17	42	–	–	35	153	41	–	–	–	312
Other Engineering (Diploma)	8	13	48	12	4	–	–	1	49	4	–	–	–	139
Built Environment (Degree)	–	–	–	–	–	–	–	–	73	–	–	–	–	73
Built Environment (Diploma)	–	–	–	–	–	–	10	–	140	–	–	–	–	150
Maths & Computer Science (Degree)	–	–	–	22	–	–	–	–	129	–	–	–	–	151
Maths & Computer Science (Diploma)	–	–	–	1	–	–	–	–	3	–	–	–	–	4
Total														5351

Table A.3 Distribution of the New Student Sample and Response Rates

Area of study (and level of award)	Population N_p	Sample N_s	Response N_r	Percentage response[a] N_r/N_s
Art & Design (Common)	1097	180	83	46
Humanities & Social Sciences (Common)	1837	360	178	50
Accountancy, Business & Admin. (Common)	3304	360	172	48
Chemistry (Common)	81	81	42	51
Pharmacy (Degree)	118	90	67	74
Other Applied Science & Technology (Common)	777	180	113	63
Medical Technology (Degree)	89	89	64	72
Other Paramedical (Degree)	254	90	69	77
Other Paramedical (Diploma)	275	90	65	72
Civil/Structural Engineering (Common)	162	162	92	57
Mech./Prod. Engineering (Common)	182	182	97	53
Other Engineering (Common)	224	180	105	58
Built Environment (Degree)	97	97	61	63
Built Environment (Diploma)	184	90	33	37
Maths & Computer Science (Degree)	305	90	38	42
Maths & Computer Science (Diploma)	50	50	20	40
Total	9036	2371	1299	55

[a] This proportion represents usable questionnaires. An additional 3.8 per cent of the original sample (N_s = 2371) replied but these questionnaires were not included in the sample because of the large amounts of missing data or late returns. A further 3.3 per cent of the questionnaires were returned to the VIC as 'unknown at this address'.

Table A.4 Distribution of the Final Year Student Sample and Response Rates

Area of study (and level of award)	Population N_p	Sample N_s	Response N_r	Percentage response[a] N_r/N_s
Art & Design (Degree)	98	98	48	49
Art & Design (Diploma)	630	90	52	58
Humanities & Social Sciences (Degree)	548	180	107	59
Humanities & Social Sciences (Diploma)	231	180	110	61
Accountancy (Diploma)	427	90	52	58
Accountancy & Business Admin. (Degree)	762	180	114	63
Business & Admin. (Diploma)	119	90	46	51
Chemistry (Degree)	127	90	55	61
Chemistry (Diploma)	13	13	10	77
Pharmacy (Degree)	111	90	72	80
Other Applied Science & Technology (Degree)	318	90	55	61
Other Applied Science & Technology (Diploma)	148	90	47	52
Medical Technology (Degree)	40	40	16	40
Medical Technology (Diploma)	48	48	25	52
Other Paramedical (Degree)	204	90	72	80
Other Paramedical (Diploma)	164	90	57	63
Civil/Structural Engineering (Degree)	160	90	61	68
Civil/Structural Engineering (Diploma)	145	90	37	41
Mech./Prod. Engineering (Degree)	104	90	58	64
Mech./Prod. Engineering (Diploma)	125	90	56	62
Other Engineering (Degree)	312	90	42	47
Other Engineering (Diploma)	139	90	50	56
Built Environment (Degree)	73	73	21	29
Built Environment (Diploma)	150	90	31	34
Maths & Computer Science (Degree)	151	90	52	58
Maths & Computer Science (Diploma)	4	4	2	50
Total	5351	2346	1348	58

[a] This proportion represents usable questionnaires. An additional 4.7 per cent of the questionnaries were rejected and a further 3.9 per cent of the questionnaires were returned to the VIC as 'unknown at this address'.

Table A.5 Distribution of 1976 Graduates and Diplomates by College: Population Statistics

Area of study (and level of award)	College													
	01	02	03	04	05	06	07	08	09	10	11	12	13	Tot
Art & Design (Degree)	–	–	–	–	–	–	–	–	–	3	–	–	–	
Art & Design (Diploma)	19	11	54	–	21	–	44	86	120	30	15	–	15	41
General Humanities (Degree)	–	–	–	–	–	–	–	–	–	40	–	–	–	40
General Humanities (Diploma)	5	30	48	–	19	–	–	–	–	70	–	–	–	17
Social Science (Degree)	–	–	–	–	–	–	–	–	20	–	–	–	–	20
Social Science (Diploma)	–	–	–	–	–	–	–	–	46	–	–	–	–	46
Accountancy (Degree)	–	–	15	–	–	–	–	–	92	56	–	–	–	163
Accountancy (Diploma)	23	32	132	78	4	–	74	57	49	100	–	–	15	564
Business & Admin. (Degree)	–	–	16	–	–	–	–	–	–	–	–	–	–	16
Business & Admin. (Diploma)	2	9	40	–	–	–	12	5	74	23	–	–	–	165
Chemistry (Degree)	6	–	–	12	–	–	–	–	31	24	–	–	–	73
Chemistry (Diploma)	4	9	16	15	6	–	–	3	22	27	–	–	–	102
Pharmacy (Degree)	–	–	–	–	–	–	–	–	–	–	–	83	–	83
Other Applied Science & Technol. (Degree)	7	–	40	–	–	–	–	32	54	–	–	–	–	133
Other Applied Science & Technol. (Diploma)	8	19	6	8	–	–	–	14	26	13	–	–	4	98
Medical Technology (Diploma)	–	–	–	–	–	–	–	–	67	–	–	–	–	67
Other Paramedical (Degree)	–	–	–	–	–	57	–	–	–	–	–	–	–	57
Other Paramedical (Diploma)	–	–	–	–	–	23	–	–	113	–	–	–	–	136
Civil/Structural Engineering (Degree)	–	–	22	–	–	–	–	–	33	34	–	–	–	89
Civil/Structural Engineering (Diploma)	19	10	33	26	14	–	–	11	27	47	–	–	–	187
Mechnical/Production Engineering (Degree)	–	–	14	–	–	–	–	–	–	62	–	–	–	76
Mechnical/Production Engineering (Diploma)	5	11	32	19	8	–	–	12	45	49	–	–	–	181
Other Engineering (Degree)	–	–	15	11	–	–	–	–	108	14	–	–	–	148
Other Engineering (Diploma)	20	10	26	17	8	–	–	6	96	52	–	–	13	248
Built Environment (Diploma)	–	–	–	–	–	–	–	–	84	–	–	–	–	84
Maths & Computer Science (Degree)	–	–	–	–	–	–	–	–	38	–	–	–	–	38
Maths & Computer Science (Diploma)	–	5	–	–	–	–	–	–	2	–	–	–	–	7
	118	146	494	201	80	80	130	226	1147	644	15	83	47	3411

Table A.6 Distribution of 1978 Graduates and Diplomates by College: Population Statistics

Area of study (and level of award)	College													
	01	02	03	04	05	06	07	08	09	10	11	12	13	Tota
Art & Design (Degree)	–	–	–	–	–	–	–	–	20	9	–	–	–	29
Art & Design (Diploma)	32	17	57	–	32	–	70	63	128	35	16	–	11	461
General Humanities (Degree)	–	–	–	–	38	–	–	–	–	135	–	–	–	173
General Humanities (Diploma)	40	39	44	–	3	–	28	–	–	21	20	–	–	195
Social Science (Degree)	–	–	52	51	–	–	–	25	23	–	–	–	11	162
Social Science (Diploma)	13	–	–	–	–	–	–	–	33	–	–	–	15	61
Accountancy (Degree)	–	–	–	47	–	–	–	–	171	104	–	–	19	341
Accountancy (Diploma)	21	46	117	70	23	–	84	69	16	84	–	–	18	548
Business & Admin. (Degree)	–	–	86	–	–	–	–	–	4	14	–	–	–	104
Business & Admin. (Diploma)	1	7	49	–	–	–	15	11	38	3	–	–	–	124
Chemistry (Degree)	12	5	–	17	10	–	–	13	37	9	–	–	–	103
Chemistry (Diploma)	3	3	3	15	2	–	–	10	6	17	–	–	–	59
Pharmacy (Degree)	–	–	–	–	–	–	–	–	–	–	–	96	–	96
Other Applied Science & Technol. (Degree)	6	7	32	37	–	–	–	11	63	3	–	–	–	159
Other Applied Science & Technol. (Diploma)	2	14	8	29	–	–	–		33	6	–	–	2	94
Medical Technology (Diploma)	–	–	–	–	–	–	–	–	60	–	–	–	–	60
Other Paramedical (Degree)	–	–	–	–	–	181	–	–	–	–	–	–	–	181
Other Paramedical (Diploma)	–	–	–	–	–	–	–	–	134	–	–	–	–	134
Civil/Structural Engineering (Degree)	–	9	17	15	–	–	–	–	32	41	–	–	–	114
Civil/Structural Engineering (Diploma)	9	2	30	13	12	–	–	14	24	33	–	–	–	137
Mechnical/Production Engineering (Degree)	–	–	17	–	–	–	–	–	12	53	–	–	–	82
Mechnical/Production Engineering (Diploma)	8	10	37	13	2	–	–	4	20	37	–	–	–	131
Other Engineering (Degree)	18	–	22	18	4	–	–	13	117	2	–	–	–	194
Other Engineering (Diploma)	10	11	32	5	4	–	–	4	81	27	–	–	8	182
Built Enviromment (Degree)	–	–	–	–	–	–	–	–	13	–	–	–	–	13
Built Environment (Diploma)	–	–	–	–	–	–	–	–	89	–	–	–	–	89
Maths & Computer Science (Degree)	–	–	–	5	–	–	–	–	52	–	–	–	–	57
Maths & Computer Science (Diploma)	–	3	–	–	–	–	–	–	1	–	–	–	–	4
Total	175	173	603	335	130	181	197	237	1207	633	36	96	84	4087

Table A.7 Distribution of the 1976 Graduate and Diplomate Sample and Response Rates

Area of study (and level of award)	Population N_p	Sample N_s	Response N_r	Percentage response[a] N_r/N_s
Art & Design (Degree)	3	3	2	67
Art & Design (Diploma)	415	100	18	18
General Humanities (Degree)	40	40	15	38
General Humanities (Diploma)	172	100	40	40
Social Science (Degree)	20	20	13	65
Social Science (Diploma)	46	46	17	37
Accountancy (Degree)	163	100	45	45
Accountancy (Diploma)	564	100	31	31
Business & Admin. (Degree)	16	16	5	31
Business & Admin. (Diploma)	165	100	39	39
Chemistry (Degree)	73	73	34	47
Chemistry (Diploma)	102	102	38	37
Pharmacy (Degree)	83	83	39	47
Other Applied Science & Technology (Degree)	133	100	42	42
Other Applied Science & Technology (Diploma)	98	98	37	38
Medical Technology (Diploma)	67	67	23	34
Other Paramedical (Degree)	57	57	19	33
Other Paramedical (Diploma)	136	100	36	36
Civil/Structural Engineering (Degree)	89	89	46	52
Civil/Structural Engineering (Diploma)	187	100	49	49
Mech./Prod. Engineering (Degree)	76	76	22	29
Mech./Prod. Engineering (Diploma)	181	100	40	40
Other Engineering (Degree)	148	100	45	45
Other Engineering (Diploma)	248	100	37	37
Built Environment (Diploma)	84	84	30	36
Maths & Computer Science (Degree)	38	38	19	50
Maths & Computer Science (Diploma)	7	7	1	14
Total	3411	1999	782	39

[a] Of the total number of graduates and diplomates sampled (N_s = 4350) an average response rate of 41.3 per cent usable questionnaires was achieved. A further 11.3 per cent of the questionnaires were returned to the VIC 'unknown at this address'. An additional 1.5 per cent of the questionnaires were rejected from the sample because of incomplete data, blank returns or as in many cases a parent notified the VIC that the graduate included in the sample was overseas.

Table A.8 Distribution of the 1978 Graduate and Diplomate Sample and Response Rates

Area of study (and level of award)	Population N_p	Sample N_s	Response N_r	Percentage response[a] N_r/N_s
Art & Design (Degree)	29	29	13	45
Art & Design (Diploma)	461	100	42	42
General Humanities (Degree)	173	100	43	43
General Humanities (Diploma)	195	100	38	38
Social Science (Degree)	162	100	39	39
Social Science (Diploma)	61	61	25	41
Accountancy (Degree)	341	100	49	49
Accountancy (Diploma)	548	100	35	35
Business & Admin. (Degree)	104	104	36	35
Business & Admin. (Diploma)	124	100	45	45
Chemistry (Degree)	103	103	44	43
Chemistry (Diploma)	59	59	26	44
Pharmacy (Degree)	96	96	58	60
Other Applied Science & Technology (Degree)	159	100	44	44
Other Applied Science & Technology (Diploma)	94	94	38	40
Medical Technology (Diploma)	60	60	32	53
Other Paramedical (Degree)	181	100	55	55
Other Paramedical (Diploma)	134	100	29	29
Civil/Structural Engineering (Degree)	114	100	47	47
Civil/Structural Engineering (Diploma)	137	100	35	35
Mech./Prod. Engineering (Degree)	82	82	33	40
Mech./Prod. Engineering (Diploma)	131	100	45	45
Other Engineering (Degree)	194	100	54	54
Other Engineering (Diploma)	182	100	49	49
Built Environment (Degree)	13	13	6	46
Built Environment (Diploma)	89	89	27	30
Maths & Computer Science (Degree)	57	57	26	46
Maths & Computer Science (Diploma)	4	4	1	25
Total	4087	2351	1014	43

[a] Of the total number of graduates and diplomates sampled (N_s = 4350) an average response rate of 41.3 per cent usable questionnaires was achieved. A further 11.3 per cent of the questionnaires were returned to the VIC as 'unknown at this address'. An additional 1.5 per cent of the questionnaires were rejected from the because of incomplete data, blank returns or as in many cases a parent notified the VIC that the included in the sample was overseas.

Table A.9 Population Statistics: Employers (from 1978 GCCA Survey)

ASIC classification - major divisions	Employer population N	Employed graduate and diplomate population N	No. of employers: effective target population[a] N_e
A Agriculture, Forestry, Fishing & Hunting	5	7	4
B Mining	4	4	4
C Manufacturing[b]	182	297	178
D Electricity, Gas & Water	3	64	3
E Construction	27	48	22
F Wholesale & Retail Trade	52	75	44
G Transport & Storage	5	17	3
H Communication	3	58	3
I Finance, Insurance, Real Estate & Business Services	143	248	126
J Public Administration & Defence	97	309	89
K Community Services	165	559	105
L Entertainment, Recreation, Restaurants, Hotels & Personal Service	27	29	15
Companies outside Australia	18	22	-
Companies unclassifiable	70	75	-
Total N	801	1812	596

a The survey was largely restricted to Victorian employers and those Australia-wide organizations who had branch offices in Victoria. A few interstate organizations were included when substantial numbers of graduates and diplomates found employment with these organizations. This group includes the 20 largest employers of graduates and diplomates.

b Includes 46 employers (94 graduates and diplomates) engaged in both Division C and Division F.

Table A.10 Sampling Statistics: Employers (from 1978 GCCA Survey)

Sampling strata	Effective target popln N_e	Sample N_s	Response N_r	Percentage response N_r/N_s
Largest Employers (N = 20)	20	20	11	55
A Agriculture, Forestry etc.	4	4	1	25
B Mining	4	4	1	25
C Manufacturing	175	42	15	35
D Electricity, Gas & Water	1	1	0	0
E Construction	20	20	5	25
F Wholesale & Retail Trade	44	20	1	5
G Transport & Storage	3	3	0	0
H Communication	2	2	1	50
I Finance & Business Services etc.	123	26	16	61
J Public Admin. & Defence	85	20	7	35
K Community Services	100	25	12	48
L Entertainment, Recreation etc.	15	13	2	15
Total N	596	200	72	36

Table A.11 Questionnaire Response Rates for Employers and Non-Employers: Sample from Three Major Employer Organizations

ASIC Classification - major divisions	Employers of Graduates/Diplomates Group 1	Non-Employers of Graduates/Diplomates Group 2	Group 3
A Agriculture, Forestry etc.	1	-	-
B Mining	-	-	-
C Manufacturing	20	16	38
D Electricity, Gas & Water	-	-	-
E Construction	1	1	4
F Wholesale & Retail Trade	2	4	10
G Transport & Storage	-	-	1
H Communication	-	-	-
I Finance & Business Services etc.	2	3	8
J Public Admin. & Defence	-	-	-
K Community Services	1	-	-
L Entertainment, Recreation etc.	-	1	-
Total N	27	25	61

Total number of organizations sampled = 600
Total response rate (usable questionnaires) = 113 (27 + 25 + 61)
Percentage response = 19

Note:

Group 2: Respondents in this group stated that they did in fact employ graduates or diplomates but completed the non-employer questionnaire.

Group 3: Respondents in this group stated they did not usually employ graduates or diplomates. That is, they only employed graduates and diplomates in a part-time or consulting basis or had never employed graduates or diplomates.

Table A.12 Modified Sampling Statistics for Employers

Sampling strata	Effective target population N_e	Response N_r
Largest Employers	29	11
A Agriculture, Forestry etc.	6	2
B Mining	6	1
C Manufacturing	256	35
D Electricity, Gas & Water	2	0
E Construction	29	6
F Wholesale & Retail Trade	64	3
G Transport & Storage	4	0
H Communication	3	1
I Finance & Business Services etc.	180	18
J Public Admin. & Defence	124	7
K Community Services	147	13
L Entertainment, Recreation etc.	22	2
Total N	872 (596+276)	99 (72+27)

Table A.13 Sample Parameters for Employer Organizations

Instructions to Employer Organizations:

(a) No overlap with other samples (VCM, MTIA, VEF, ACER).

(b) Number of organizations in survey = 200 per sample.

(c) Must ensure that some organizations who do not employ graduates or diplomates are included in the sample (small companies?).

(d) Must ensure variability of operations of organizations included in the sample or can concentrate on one particular area (refer ASIC for groupings).

(e) Only full members of the 'association' are to be included in a sample.

(f) Subsidiaries can be treated as separate organizations if they are largely responsible for their operations and staff recruiting programs.

(g) Sample is to be limited to organizations located within Victoria.

(h) Consider the following variables when selecting the sample

- number of employees;
- $ turnover;
- number of profeesional employees to the total number of employees;
- number of subsidiaries or divisions.

Table A.14 Distribution of the Annual Sales Figure or Budget Allocation for the Sampled Employers and Non-Employers

Annual sales figure or budget allocation	Employers %	Non-employers %
Below $100,000	-	2
$100,000 - $250,000	7	12
$¼ m to ½ m	-	12
$½ m to 1 m	1	12
$1 m to $5 m	16	40
$5 m to $20 m	32	13
$20 m - $100 m	27	8
Above $100 m	17	1
Total %	100	100
Total N	95	60

Table A.15 Distribution of the Size of Workforce for the Sampled Employers and Non-Employers

Approx. size of workforce (Full-time equivalents) 1978-1979 financial year	Employers %	Non-employers %
Below 25	-	36
26 - 50	15	11
51 - 100	11	25
101 - 200	12	11
201 - 500	23	10
501 - 1000	18	7
1001 - 5000	17	-
Above 5000	4	-
Total %	100	100
Total N	97	61

Table A.16 Description of the Type of Job, Length of Time and Average Number of Jobs Held by All New and Final Year Students

Job type	Up to 2 mths %	3-6 mths %	7-12 mths %	1-2 yrs %	2-8 yrs %	Above 8 yrs %	Total %	Median (mths)	Average no. of jobs
Time job held: All new students (N=1277)									
Before Course:									
Part-time or casual (FTE)	31	44	16	4	5	-	100	5.2	1.7
Full-time in field of training	3	7	13	17	40	20	100	44.3	2.1
Full-time out of field of training	18	10	12	9	25	26	100	29.4	2.9
During Course:									
Part-time or casual (FTE)	37	61	1	-	1	-	100	2.7	1.3
Full-time in field of training	4	78	4	13	1	-	100	6.1	1.1
Full-time out of field of training	12	77	5	6	-	-	100	5.9	1.1
Time job held: All final year students (N=1348)									
Before Course:									
Part-time or casual (FTE)	35	44	14	6	1	-	100	3.3	1.4
Full-time in field of training	6	9	13	12	31	29	100	41.1	2.1
Full-time out of field of training	19	16	12	11	24	18	100	14.5	2.2
During Course:									
Part-time or casual (FTE)	20	41	33	4	2	-	100	6.0	1.8
Full-time in field of training	17	21	10	14	36	2	100	13.8	1.6
Full-time out of field of training	24	35	11	8	21	1	100	5.6	1.7

Note: See Table 7.1 for an indication of the proportion of the sample with experience in each job type.

Table A.17 Time Taken to Find Any Job: Area of Study by Time Taken for All 1976 Graduates and Diplomates Not Employed at the Completion of a Course

Area of study (and level of award)	Time taken (months)								
	One or less %	2-3 %	Three or less %	4-6 %	7-12 %	13-24 %	25+ %	Never employed full-time %	Total N
Art & Design (Degree)	100	-	100	-	-	-	-	-	1
Art & Design (Diploma)	23	33	56	12	8	4	12	8	61
General Humanities (Degree)	50	20	70	10	10	-	10	-	6
General Humanities (Diploma)	40	28	68	15	14	-	-	3	17
Social Science (Degree)	57	43	100	-	-	-	-	-	3
Social Science (Diploma)	27	18	45	18	9	-	-	28	7
Accountancy (Degree)	52	36	88	9	3	-	-	-	29
Accountancy (Diploma)	46	30	76	15	9	-	-	-	70
Business & Admin. (Degree)	100	-	100	-	-	-	-	-	3
Business & Admin. (Diploma)	59	21	80	-	20	-	-	-	11
Chemistry (Degree)	31	34	65	12	10	9	4	-	12
Chemistry (Diploma)	40	21	61	26	-	5	-	8	8
Pharmacy (Degree)	77	3	80	6	9	-	3	2	18
Other Applied Science & Tech. (Degree)	34	28	62	21	-	4	4	9	23
Other Applied Science & Tech. (Diploma)	36	23	59	32	7	-	-	2	17
Medical Technology (Diploma)	57	-	57	14	-	-	-	29	5
Other Paramedical (Degree)	60	20	80	10	-	-	-	10	7
Other Paramedical (Diploma)	76	24	100	-	-	-	-	-	18
Civil/Structural Engineering (Degree)	41	34	75	22	3	-	-	-	18
Civil/Structural Engineering (Diploma)	47	36	83	6	11	-	-	-	30
Mech./Prod. Engineering (Degree)	46	24	70	7	5	18	-	-	18
Mech./Prod. Engineering (Diploma)	62	24	86	14	-	-	-	-	22
Other Engineering (Degree)	40	29	69	15	12	4	-	-	32
Other Engineering (Diploma)	36	29	65	22	9	-	-	4	32
Built Environment (Diploma)	20	20	40	20	40	-	-	-	3
Maths & Computer Science (Degree)	72	21	93	7	-	-	-	-	7
	45	28	73	13	7	2	2	3	485

Total N = 485 or 62 per cent of the total group.

Table A.18 Time Taken to Find Any Job - Area of Study by Time Taken for All 1978 Graduates and Diplomates Not Employed at the Completion of a Course

Area of study (and level of award)	Time taken (months)								
	One or less %	2-3 %	Three or less %	4-6 %	7-12 %	13-24 %	25+ %	Never employed full-time %	Total N
Art & Design (Degree)	40	23	63	10	-	-	-	27	5
Art & Design (Diploma)	29	13	42	18	12	2	-	26	99
General Humanities (Degree)	24	12	36	18	18	-	-	28	20
General Humanities (Diploma)	39	20	59	6	-	-	-	35	28
Social Science (Degree)	56	21	77	9	6	-	-	8	31
Social Science (Diploma)	29	10	39	17	17	6	-	21	8
Accountancy (Degree)	59	26	85	8	4	-	-	3	48
Accountancy (Diploma)	41	33	74	11	8	7	-	-	69
Business & Admin. (Degree)	51	22	73	2	14	9	-	2	19
Business & Admin. (Diploma)	42	44	86	4	-	-	-	10	14
Chemistry (Degree)	40	41	81	-	7	8	-	4	16
Chemistry (Diploma)	46	23	69	-	11	-	-	20	5
Pharmacy (Degree)	75	8	83	-	-	-	-	17	21
Other Applied Science & Tech. (Degree)	52	12	64	19	9	-	6	2	33
Other Applied Science & Tech. (Diploma)	35	16	51	30	19	-	-	-	17
Medical Technology (Diploma)	60	-	60	40	-	-	-	-	2
Other Paramedical (Degree)	76	3	79	8	-	3	-	10	31
Other Paramedical (Diploma)	57	43	100	-	-	-	-	-	8
Civil/Structural Engineering (Degree)	35	34	69	15	6	2	-	8	24
Civil/Structural Engineering (Diploma)	39	28	67	27	6	-	-	-	24
Mech./Prod. Engineering (Degree)	36	49	85	15	-	-	-	-	15
Mech./Prod. Engineering (Diploma)	56	28	84	7	6	-	-	3	24
Other Engineering (Degree)	36	37	73	13	8	2	-	4	38
Other Engineering (Diploma)	53	18	71	19	6	-	-	4	23
Built Environment (Diploma)	88	12	100	-	-	-	-	-	7
Maths & Computer Science (Degree)	72	22	94	-	-	6	-	-	10
Maths & Computer Science (Diploma)	100	-	100	-	-	-	-	-	1
Total	46	23	69	12	7	2	-	10	640

Total N = 640 or 63 per cent of the total group (N = 1014).

Table A.19 Average Ratings for the Qualities of New Graduates and Diplomates

Description of quality or attribute	Group surveyed					
	New students	Final year students	1978 Graduates/ diplomates	1976 Graduates/ diplomates	Employers rating for graduates	Employers rating for diplomates
Ability to communicate with others	1.3	1.2	1.2	1.2	1.2	1.2
Ability to supervise junior staff	2.3	2.1	2.1	2.0	2.6	2.6
Ability to make decisions	1.3	1.3	1.4	1.3	1.8	1.8
Career adaptability	1.9	1.9	1.9	2.0	1.9	1.9
Specific skills	1.6	1.7	1.8	1.9	1.8	1.7
Ability in assigning priorities	1.8	1.8	1.7	1.7	1.8	1.8
Self motivation	1.4	1.4	1.4	1.4	1.3	1.3
Flexibility and receptivity to ideas	1.5	1.6	1.5	1.7	1.6	1.6
Industrial relations skills	2.4	2.4	2.6	2.6	3.1	3.0
General knowledge of related disciplines	1.9	1.9	2.0	2.1	2.4	2.4
Analytical ability	1.6	1.7	1.7	1.7	1.7	1.7
Fundamental research potential	2.2	2.3	2.4	2.5	2.8	2.9
Ability to work in a team	1.6	1.6	1.7	1.7	1.6	1.6
Ability to write reports	1.7	1.8	1.9	1.9	1.8	1.9

Note 1: Value of Ratings 1 = Very important
2 = Important
3 = Not very important
4 = Not important

Note 2: The data for the student groups refer to those undertaking their first course at the time of the study. The data for the graduate and diplomate groups refers to those who graduated from their first course in 1976 or 1978.

Table A.20 Responsibility for the Development of Qualities of Graduates and Diplomates: Employers' and 1976 Graduates' and Diplomates' Points of View

Description of quality or attribute	Total responsibility of employers		Mostly the responsibility of employers		Both sectors equally responsible		Mostly the responsibility of universities and colleges		Total responsibility of universities and colleges		Individual's responsibility	
	Empl. %	G/D %	Empl. %	G/D %	Empl. %	G/D %	Empl. %	G/D %	Empl. %	G/D %	Empl. %	G/D %
Ability to communicate with others	-	-	3	6	44	55	41	33	12	6	-	-
Ability to supervise junior staff	17	18	59	53	23	24	1	5	-	-	-	-
Ability to make decisions	-	3	14	17	53	51	24	24	9	5	-	-
Career adaptability	3	5	16	11	36	35	38	35	7	14	-	-
Specific skills	6	7	15	16	25	30	37	34	17	13	-	-
Ability in assigning priorities	5	7	20	37	47	38	20	15	7	3	1	-
Self motivation	2	5	5	15	50	53	30	18	9	9	4	-
Flexibility and receptivity to ideas	-	2	1	8	38	43	45	35	15	12	1	-
Industrial relations skills	27	15	37	41	23	30	9	12	4	2	-	-
General knowledge of related disciplines	1	1	10	12	19	31	50	41	20	15	-	-
Analytical ability	-	-	1	1	19	25	57	49	23	25	-	-
Fundamental research potential	-	1	2	2	16	31	41	42	41	24	-	-
Ability to work in a team	6	5	17	18	61	60	14	14	2	3	-	-
Ability to write reports	3	1	4	3	29	33	42	40	22	23	-	-

Note: Employers N = 89
1976 Graduates and Diplomates N = 469

APPENDIX II

QUESTIONNAIRES

Questionnaire to New Students

Australian Council for Educational Research

EDUCATION AND EMPLOYMENT

At the request of the Victoria Institute of Colleges we are investigating the attitudes of employers, college graduates and diplomates and first and final year college students to the relationship between education and work.

In this questionnaire we are asking you for some background information on your schooling, details of your educational career and work history and your attitudes to work and education.

In this study a graduate is defined as a person who holds a Bachelor's degree (e.g. BSc). A diplomate is defined as a person who holds a Diploma (e.g. Diploma of Arts), not a Postgraduate Diploma (e.g. Graduate Diploma in Marketing).

Please read each question carefully and answer by circling the appropriate number or writing your response in the space provided.

All your answers are kept strictly confidential.

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1 Date of birth: _____ day _____ month 19 ____ year

2 Sex (Circle one number)

Male	1
Female	2

3 What type of secondary school did you last attend? (Circle one number)

Government High School	1
Government Technical School	2
Independent Catholic School	3
Independent Non-Catholic School	4
Other (specify) _____	5

4 In what month and year did you finish at that school? _____ month 19 ____ year

5 Did you complete the matriculation or final year at that school?

Yes	1
No	2

6 Think of all the courses (e.g. Matriculation, Diploma of Engineering, Certificate of Chemistry, BA, TOP) you have undertaken since leaving that school. Please describe each course by filling in the table below. Start with the first course you enrolled in and include any courses that you are enrolled in at present.

Name of Institution	Major subject/s, field of study (e.g. Civil Engin., Painting, Sociology)	Award gained (e.g. BSc, Dip.Art, etc.)	Full-time part-time or sandwich	Month & year course started	Month & year course finished	Month & year course discontinued
1						
2						
3						
4						
5						

7 Below are listed a series of items which describe some of the qualities of graduates and diplomates. Please indicate how important these qualities are for success in a job in your field of training.

Qualities or attributes	Very important	Important	Not very important	Not important
• Ability to communicate with others	1	2	3	4
• Ability to supervise junior staff	1	2	3	4
• Ability to make decisions	1	2	3	4
• Career adaptability	1	2	3	4
• Specific skills	1	2	3	4
• Ability in assigning priorities	1	2	3	4
• Self motivation	1	2	3	4
• Flexibility and receptivity to ideas	1	2	3	4
• Industrial relations skills	1	2	3	4
• General knowledge of related disciplines	1	2	3	4
• Analytical ability	1	2	3	4
• Fundamental research potential	1	2	3	4
• Ability to work in a team	1	2	3	4
• Ability to write reports	1	2	3	4
• Other (specify) _____	1	2	3	4

8 Do you have a firm idea of the work you would like to do when you complete your course? (Circle one number)

Yes 1
Undecided 2
No 3

9 If YES to question 8, please describe the specific fields in which you will seek employment (e.g. specific government department, specific company, or specific activity).

_____

_____

_____

_____

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10 Think of the kind of job you would like to have when you complete your degree or diploma. For each of the job characteristics listed below, please indicate on the 7-point scale:

- the highest level you could reasonably hope for in a first job after graduation, relative to others in your field;
- the level you really expect to achieve in a first job after graduation, relative to others in your field;
- the lowest level you would tolerate in a first job after graduation, relative to others in your field.

	Level hoped for (Very high … Very low)	Level expected (Very high … Very low)	Level tolerated (Very high … Very low)
Example – Flexible working hours	7 (6) 5 4 3 2 1	7 6 5 (4) 3 2 1	7 6 5 4 3 (2) 1
• Salary (e.g. gross annual income, non-salary financial benefits)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Advancement (e.g. promotion, experience in different positions)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Security (e.g. guaranteed work and position, superannuation)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Responsibility (e.g. opportunity to plan own work, to work at own pace)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Skills (e.g. opportunity to use learnt skills, to develop new skills)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• People (e.g. working with friendly people, and a variety of people)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Other (specify) _____	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1

11 What do you think your prospects are of finding a full-time job in your field of training? (Circle one number for (a) and one for (b))

		Very good	Good	Fair	Hopeless
(a)	Within 4 months of completing your course	1	2	3	4
(b)	Between 4 and 8 months after completing your course	1	2	3	4

Please turn over

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12 Think of all of the jobs you have had since you left school. On the table below please describe each job and other activities (e.g. domestic duties, extensive travel, etc.) that you have been involved in. Include any periods of unemployment. Job changes between government departments are counted as two separate jobs.

Job/ Activity	Exact job description or activity	Your employer's activities (indicate if govt)	Month and year job/ activity started	Month and year job/ activity finished	Type of work (part-time full-time, etc)
First					
2					
3					
4					
5					
6					
7					
8					

13 What are your immediate plans when you complete your current course? (Circle one number)

Continue study and do postgraduate work.	1
Get a job in my field of training as soon as possible.	2
Take a break and travel for about six months, then worry about employment.	3
Try and get any kind of a full-time job.	4
No firm plans yet.	5
Continue in my current job (if a part-time or sandwich student)	6
Get another job in my field of training (if a part-time or sandwich student)	7
Other (please specify) _____	8

Thank you very much for your time and co-operation.

Australian Council for Educational Research

EDUCATION AND EMPLOYMENT

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In this questionnaire we are asking you for some background information on your schooling, details of your educational career and work history and your attitudes to work and education.

In this study a graduate is defined as a person who holds a Bachelor's degree (e.g. BSc). A diplomate is defined as a person who holds a Diploma (e.g. Diploma of Arts), not a Postgraduate Diploma (e.g. Graduate Diploma in Marketing).

Please read each question carefully and answer by circling the appropriate number or writing your response in the space provided.

All your answers are kept strictly confidential.

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1 Date of birth: _____ day _____ month 19 ____ year

2 Sex (Circle one number)

Male	1
Female	2

3 What type of secondary school did you last attend? (Circle one number)

Government High School	1
Government Technical School	2
Independent Catholic School	3
Independent Non-Catholic School	4
Other (specify) _____	5

4 In what month and year did you finish at that school? _____ month 19 ____ year

5 Did you complete the matriculation or final year at that school?

Yes	1
No	2

6 Think of all the courses (e.g. Matriculation, Diploma of Engineering, Certificate of Chemistry, BA, TOP) you have undertaken since leaving that school. Please describe each course by filling in the table below. Start with the first course you enrolled in and include any courses that you are enrolled in at present.

Name of Institution	Major subject/s, field of study (e.g. Civil Engin., Painting, Sociology)	Award gained (e.g. BSc, Dip.Art, etc.)	Full-time part-time or sandwich	Month & year course started	Month & year course finished	Month & year course discontinued
1						
2						
3						
4						
5						

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7 Below are listed a series of items which describe some of the qualities of graduates and diplomates. Please indicate how important these qualities are for success in a job in your field of training.

Qualities or attributes	Very important	Important	Not very important	Not important
• Ability to communicate with others	1	2	3	4
• Ability to supervise junior staff	1	2	3	4
• Ability to make decisions	1	2	3	4
• Career adaptability	1	2	3	4
• Specific skills	1	2	3	4
• Ability in assigning priorities	1	2	3	4
• Self motivation	1	2	3	4
• Flexibility and receptivity to ideas	1	2	3	4
• Industrial relations skills	1	2	3	4
• General knowledge of related disciplines	1	2	3	4
• Analytical ability	1	2	3	4
• Fundamental research potential	1	2	3	4
• Ability to work in a team	1	2	3	4
• Ability to write reports	1	2	3	4
• Other (specify) _____	1	2	3	4

8 Do you have a firm idea of the work you would like to do when you complete your course? (Circle one number)

Yes 1
Undecided 2
No 3

9 If YES to question 8, please describe the specific fields in which you will seek employment (e.g. specific government department, specific company, or specific activity).

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10 Think of the kind of job you would like to have when you complete your degree or diploma. For each of the job characteristics listed below, please indicate on the 7-point scale:

- the highest level you could reasonably hope for in a first job after graduation, relative to others in your field;
- the level you really expect to achieve in a first job after graduation, relative to others in your field;
- the lowest level you would tolerate in a first job after graduation, relative to others in your field.

	Level hoped for Very high ... Very low	Level expected Very high ... Very low	Level tolerated Very high ... Very low
Example – Flexible working hours	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Salary (e.g. gross annual income, non-salary financial benefits)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Advancement (e.g. promotion, experience in different positions)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Security (e.g. guaranteed work and position, superannuation)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Responsibility (e.g. opportunity to plan own work, to work at own pace)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Skills (e.g. opportunity to use learnt skills, to develop new skills)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• People (e.g. working with friendly people, and a variety of people)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Other (specify) _____	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1

11 What do you think your prospects are of finding a full-time job in your field of training? (Circle one number for (a) and one for (b))

	Very good	Good	Fair	Hopeless
(a) Within 4 months of completing your course	1	2	3	4
(b) Between 4 and 8 months after completing your course	1	2	3	4

Please turn over

12 Think of all of the jobs you have had since you left school. On the table below please describe each job and other activities (e.g. domestic duties, extensive travel, etc.) that you have been involved in. Include any periods of unemployment. Job changes between government departments are counted as two separate jobs.

Job/ Activity	Exact job description or activity	Your employer's activities (indicate if govt)	Month and year job/ activity started	Month and year job/ activity finished	Type of work (part-time full-time, etc)
First					
2					
3					
4					
5					
6					
7					
8					

13 What are your immediate plans when you complete your current course? (Circle one number)

Continue study and do postgraduate work.	1
Get a job in my field of training as soon as possible.	2
Take a break and travel for about six months, then worry about employment.	3
Try and get any kind of a full-time job.	4
No firm plans yet.	5
Continue in my current job (if a part-time or sandwich student)	6
Get another job in my field of training (if a part-time or sandwich student)	7
Other (please specify) _____	8

14 Up to now how many (a) applications or (b) enquiries have you made to companies or organizations about employment when you finish your current course? (Circle one number for (a) and one for (b)

	None	Up to 5	5 to 10	More than 10
(a) Applications	1	2	3	4
(b) Enquiries	1	2	3	4

Thank you very much for your time and co-operation.

Australian Council for Educational Research

EDUCATION AND EMPLOYMENT

At the request of the Victoria Institute of Colleges we are investigating the attitudes of employers, college graduates and diplomates and first and final year college students to the relationship between education and work.

In this questionnaire we are asking you for some background information on your schooling, details of your educational career and work history and your attitudes to work and the education process.

In this study a graduate is defined as a person who holds a Bachelor's degree (e.g. BSc). A diplomate is defined as a person who holds a Diploma (e.g. Diploma of Arts), not a Postgraduate Diploma (e.g. Graduate Diploma in Marketing).

Please read each question carefully and answer by circling the appropriate number or writing your response in the space provided.

All your answers are kept strictly confidential.

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1 Date of birth: _____ day _____ month 19____ year

2 Sex (Circle one number)

Male	1
Female	2

3 What type of secondary school did you last attend? (Circle one number)

Government High School	1
Government Technical School	2
Independent Catholic School	3
Independent Non-Catholic School	4
Other (specify) _____	5

4 In what month and year did you finish at that school? _____ month 19____ year

5 Did you complete the matriculation or final year at that school? (Circle one number)

Yes	1
No	2

6 Think of all the courses (e.g. Matriculation, Diploma of Engineering, Certificate of Chemistry, BA, TOP) you have undertaken since leaving that school. Please describe each course by filling in the table below. Start with the first course you enrolled in and include any courses that you are enrolled in at present.

Name of institution	Major subject/s field of study (e.g. Civil Engin., Painting, Sociology)	Award gained (e.g. BSc, Dip.Art,etc.)	Full-time part-time or sandwich	Month & year course started	Month & year course finished	Month & year course discontinued
1						
2						
3						
4						
5						

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7 Below are listed a series of items which describe some of the qualities or attributes of graduates and diplomates. Please indicate in:

SECTION A: how important these qualities are for success in a job in your field of training, and in

SECTION B: the extent to which you consider the development of these qualities or attributes is the responsibility of employers or the tertiary education sector (e.g. Universities, Colleges and Institutes).
(Circle one number for each quality for Section A and one number for Section B).

Qualities or attributes	SECTION A – Importance for success in a job				SECTION B – Responsibility for development				
	Very important	Important	Not very important	Not important	Total responsibility of employers	Mostly the responsibility of employers	Both sectors equally responsible	Mostly the responsibility of Universities and Colleges	Total responsibility of Universities and Colleges
Ability to communicate with others	1	2	3	4	1	2	3	4	5
Ability to supervise junior staff	1	2	3	4	1	2	3	4	5
Ability to make decisions	1	2	3	4	1	2	3	4	5
Career adaptability	1	2	3	4	1	2	3	4	5
Specific skills	1	2	3	4	1	2	3	4	5
Ability in assigning priorities	1	2	3	4	1	2	3	4	5
Self motivation	1	2	3	4	1	2	3	4	5
Flexibility and receptivity to ideas	1	2	3	4	1	2	3	4	5
Industrial relations skills	1	2	3	4	1	2	3	4	5
General knowledge of related disciplines	1	2	3	4	1	2	3	4	5
Analytical ability	1	2	3	4	1	2	3	4	5
Fundamental research potential	1	2	3	4	1	2	3	4	5
work in a team	1	2	3	4	1	2	3	4	5
write reports	1	2	3	4	1	2	3	4	5
Other	1	2	3	4	1	2	3	4	5

8 Think back to when you completed your first degree or diploma. At that time you probably had a good idea of the range of jobs available to you. For each of the job characteristics listed below, please indicate on the 7-point scale:

- the highest level you could have reasonably hoped for in a first job after graduation, relative to others in your field;
- the level you really expected to achieve in a first job after graduation, relative to others in your field;
- the lowest level you would have tolerated in a first job after graduation, relative to others in your field;
- what your first job after completing your first degree or diploma was actually like (relative to others in the same field);
- what your current job is like (relative to others in the same field).

Job characteristics	Level hoped for (Very high – Very low)	Level expected (Very high – Very low)	Level tolerated (Very high – Very low)	First job after completing first degree/diploma (Very high – Very low)	Current job (Very high – Very low)
Example – Flexible working hours	7 (6) 5 4 3 2 1	7 6 5 (4) 3 2 1	7 6 5 4 3 (2) 1	7 6 5 (4) 3 2 1	7 (6) 5 4 3 2 1
• Salary (e.g. gross annual income, non-salary financial benefits)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Advancement (e.g. promotion, experience in different positions)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Security (e.g. guaranteed work and position, superannuation)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Responsibility (e.g. opportunity to plan own work, to work at own pace)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Skills (e.g. opportunity to use learnt skills, to develop new skills)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• People (e.g. working with friendly people, and a variety of people)	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1
• Other (specify) _____	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1	7 6 5 4 3 2 1

9 Think of all the jobs you have had since you left school. On the table below please describe each job and other activities (e.g. domestic duties, extensive travel, etc.) lasting more than two months. Include any periods of unemployment. Job changes between government departments are counted as two separate jobs.

Job/ Activity	Exact job description or activity	Your employers activities (indicate if Govt)	Month and year job/ activity started	Month and year job/ activity finished	Type of work (part-time, full-time, etc)
First					
2					
3					
4					
5					
6					
7					
8					
9					
10					

10 Think of each job/activity listed above in terms of the job characteristics given in question 8. Indicate (by circling one number) how you feel, on the whole, about each job/activity you have described above.

Job/ Activity	Terrible	Unhappy	Mostly dissatisfied	Mixed – equally dissatisfied & satisfied	Mostly satisfied	Pleased	Delighted
First	1	2	3	4	5	6	7
2	1	2	3	4	5	6	7
3	1	2	3	4	5	6	7
4	1	2	3	4	5	6	7
5	1	2	3	4	5	6	7
6	1	2	3	4	5	6	7
7	1	2	3	4	5	6	7
8	1	2	3	4	5	6	7
9	1	2	3	4	5	6	7
10	1	2	3	4	5	6	7

Thank you very much for your time and co-operation.

Australian Council for Educational Research

EDUCATION AND EMPLOYMENT

At the request of the Victoria Institute of Colleges we are investigating the attitudes of employers to the education and subsequent employment of graduates and diplomates from Australian Universities and Colleges of Advanced Education.

In this questionnaire we are seeking general information on the size and activities of your organization, your comments on past and likely future developments in the employment rates for graduates and diplomates, your current recruiting requirements and practices and, finally, your attitude to the education process.

This and other information will be used to plan new courses and to revise existing courses as well as providing a broad picture of the industry's attitude to the tertiary education process.

We ask for your name and telephone number in case we wish to contact you in the future. Your answers to this questionnaire are confidential and no individual organization will ever be identified in any report.

In this study a graduate is defined as a person who holds a Bachelor's degree (e.g. Bachelor of Arts) awarded by a University (e.g. Melbourne University) or a College of Advanced Education (e.g. RMIT, Swinburne College of Technology). A diplomate is defined as a person who holds a diploma (e.g. Diploma of Arts, Diploma of Science, etc.) awarded by a University or College of Advanced Education. Persons who hold a certificate or a diploma from a Technical College (of the Department of Technical and Further Education) are not classified as graduates or diplomates.

A new graduate or diplomate is defined as a person who has no or very little work experience, i.e. just completed a course on a full-time, part-time, or sandwich pattern of attendance. An experienced graduate or diplomate is defined as a person with at least two years work experience after completing a degree or diploma.

Please answer all the questions. We welcome any comments you may have.

Thank you for your time and co-operation.

Name of organization: _____

Address of organization: _____

_____ Telephone: _____

Name of respondent: _____

Position of respondent: _____

Activities of organization: _____

_____

_____

1 What was the approximate annual sales figure/budget allocation for your organization for the last financial year (1978-79)? (Circle one number)

Below $½m	1
$½m – $1m	2
$1m – $5m	3
$5m – $20m	4
$20m – $100m	5
Above $100m	6

2 What was the approximate average size of your workforce for the last financial year? (Count part-time and casual workers in terms of full-time equivalents). (Circle one number)

Below 50	1
51 – 100	2
101 – 200	3
201 – 500	4
501 – 1000	5
1001 – 5000	6
Above 5000	7

3 To what extent has your annual sales figure/budget allocation and workforce size changed over the last three financial years? (Circle one number for each)

	Significantly increased	Increased	Remained constant	Decreased	Significantly decreased
• Sales/budget allocation	1	2	3	4	5
• Workforce	1	2	3	4	5

4 As at 30 June 1979, what percentage of the employees in your organization held one of the following educational qualifications? (Count part-time and casual workers in terms of full-time equivalents). (Give approximate percentage to the nearest 5% for each qualification listed)

Highest educational qualification held	Approximate percentage
• Postgraduate qualification (e.g. PhD, Master, Graduate Diploma, Fellow, etc.)	_____ %
• Bachelor Degree (e.g. BE, BA, etc. including honours, awarded by a University/College/Institute)	_____ %
• Undergraduate Diploma (e.g. Associateship RMIT, Diploma of Chemistry, of Engineering, etc. awarded by a University/College/Institute, but not a Diploma from the Department of Technical and Further Education)	_____ %
• Associate Diploma or Certificate (e.g. Certificate of Technology, Trade Certificates, etc. awarded by Universities, Colleges, Institutes or diplomas from the Department of Technical and Further Education)	_____ %
• Qualification awarded by a professional association (AASA, RACI, etc. – examination conducted by the association)	_____ %
• No formal tertiary qualification (includes those employees with a school qualification, or qualifications awarded by commercial colleges, etc.)	_____ %
• Other (specify) _____	_____ %
TOTAL	100 %

NOTE: If an employee holds more than one qualification, only the highest award is counted. If an employee holds an educational qualification and a professional association qualification, only the educational award is counted.

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5 In your organization, during the LAST FIVE years (July 1974 to June 1979), what changes have taken place in the rate of employment of new graduates and diplomates from Universities, Colleges or Institutes of Technology? (Circle one number for each area for both graduates and diplomates)

Area in which qualification of graduate or diplomate obtained	Never employed new graduates from this area	Number of new graduates employed from this area has: Noticeably decreased	Remained static*	Noticeably increased	Never employed new diplomates from this area	Number of new diplomates employed from this area has: Noticeably decreased	Remained static*	Noticeably increased		
• Fine & Applied Arts (e.g. Graphic Design, Painting, Sculpture, Film, TV, etc.)	1	2	3	4	1	2	3	4	27	3
• General Humanities (e.g. English, History, Philosophy, etc.)	1	2	3	4	1	2	3	4	28	3
• Social Sciences (e.g. Librarianship, Social Work, Psychology, Journalism, etc.)	1	2	3	4	1	2	3	4	29	3
• Business and Administration (e.g. Accounting, Economics, EDP, Management, etc.)	1	2	3	4	1	2	3	4	30	3
• Applied Science and Technology (e.g. Chemistry, Biology, Metallurgy, Pharmacy, Physical Education, etc.)	1	2	3	4	1	2	3	4	31	4
• Paramedical (e.g. Speech Pathology, Physiotherapy, etc.)	1	2	3	4	1	2	3	4	32	4
• Engineering (e.g. Civil, Naval, Surveying, Cartography, etc.)	1	2	3	4	1	2	3	4	33	4
• Mathematics and Computer Science	1	2	3	4	1	2	3	4	34	4
• Built Environment (e.g. Architecture, Town Planning, Building, Quantity Surveying, etc.)	1	2	3	4	1	2	3	4	35	4

* Remained relatively constant, normal recruitment rate (e.g. 5-7 Accountants per year) from these areas unchanged over the last five years. 'Noticeably' can be defined as approximately 25% change.

6 If there have been any significant decreases or increases (approximately 50% or greater change) in the employment rates of new graduates or diplomates indicate the specific field (e.g. Electrical Engineering, Data Processing, etc.) and the reasons for the changes (e.g. no work in this area, rapid expansion due to new technology, government grants for specific projects, etc.)
(List fields, circle one number and give reasons)

Specific field	Significant decrease	Significant increase	Reasons	
A	1	2		45 - 46
B	1	2		47 - 48
C	1	2	197	49 - 50

7 Assuming a real increase of 10% over the NEXT FIVE years (2% per year on average) in sales/budget allocation and assuming the present turnover of staff, what changes are likely to take place in the rate of employment of new graduates and diplomates in your organization?
(Circle one number for graduates and one number for diplomates for each area listed)

Area in which qualification of graduate or diplomate obtained	Do not intend employing new graduates from this area	Number of new graduates employed from this area is likely to: Noticeably decrease	Remain static*	Noticeably increase	Do not intend employing new diplomates from this area	Number of new diplomates employed from this area is likely to: Noticeably decrease	Remain static*	Noticeably increase
• Fine & Applied Arts (e.g. Graphic Design, Painting, Sculpture, Film, TV, etc.)	1	2	3	4	1	2	3	4
• General Humanities (e.g. English, History, Philosophy, etc.)	1	2	3	4	1	2	3	4
• Social Sciences (e.g. Librarianship, Social Work, Psychology, Journalism, etc.)	1	2	3	4	1	2	3	4
• Business and Administration (e.g. Accounting, Economics, EDP, Management, etc.)	1	2	3	4	1	2	3	4
• Applied Science and Technology (e.g. Chemistry, Biology, Metallurgy, Pharmacy, Physical Education, etc.)	1	2	3	4	1	2	3	4
• Paramedical (e.g. Speech Pathology, Physiotherapy, etc.)	1	2	3	4	1	2	3	4
• Engineering (e.g. Civil, Naval, Surveying, Cartography, etc.)	1	2	3	4	1	2	3	4
• Mathematics and Computer Science	1	2	3	4	1	2	3	4
• Built Environment (e.g. Architecture, Town Planning, Building, Quantity Surveying, etc.)	1	2	3	4	1	2	3	4

* Should remain relatively constant, normal recruitment rate (e.g. 2-3 graphic artists per year) for the next five years. 'Noticeably' can be defined as approximately 25% change.

8 If there are likely to be any significant decreases or increases (approximately 50% or greater change) in the employment rates of new graduates or diplomates over the next five years, indicate the specific field in which you expect such a change and whether it will be an increase or decrease.
(Circle one number and give reasons)

Specific field	Significant decrease	Significant increase	Reasons
A	1	2	
B	1	2	
C	1	2	

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Card 2
(1 - 8)

9 During the LAST THREE years (July 1976 to June 1979) from what type of tertiary institution have you recruited new graduates and diplomates?
(Write in the approximate percentage for each type of institution listed)

	Percent from Australian Universities	Percent from Australian Colleges and Institutes of Technology (not TAFE Colleges)	Percent from overseas	Total	
• Graduates				100%	9 - 14
• Diplomates				100%	15 - 20

10 During the NEXT THREE years (July 1979 to June 1982) from what type of tertiary educational institution do you intend recruiting new graduates and diplomates?
(Write in the approximate percentage for each type of institution listed)

	Percent from Australian Universities	Percent from Australian Colleges and Institutes of Technology (not TAFE Colleges)	Percent from overseas	Total	
• Graduates				100%	21 - 26
• Diplomates				100%	27 - 32

11 If your responses to questions 9 and 10 above showed a change in recruitment patterns, what are your reasons?

12 For the LAST FINANCIAL YEAR (1978-79) what percentages of new graduates and diplomates and experienced graduates and diplomates (with at least two years relevent work experience after graduation) did your organization employ?

	Percent of new graduates and diplomates employed	Percent of experienced graduates and diplomates employed	Total	
• Graduates			100%	33 - 36
• Diplomates			100%	37 - 40

13 Does your organization employ experienced graduates and diplomates (i.e. with at least two years relevant work experience after graduation) in preference to new graduates and diplomates?

Yes, all of the time	1
Yes, most of the time	2
Occasionally	3
No	4

14 If YES, in what specific fields and for what reasons?

_____

_____

_____

15 At present what techniques does your organization use when recruiting new graduates or diplomates? (Circle one number for each technique listed)

Technique	Used most of the time	Used some of the time	Used infrequently or not at all
• Advertise in the local and national newspapers	1	2	3
• Advertise in professional magazines and journals	1	2	3
• Recruit through the University, College or Institute employment section	1	2	3
• Recruit by recommendations from existing staff	1	2	3
• Visit tertiary institutions for talks with prospective graduates and diplomates to generate preliminary list of applicants	1	2	3
• Contact the Commonwealth Employment Service	1	2	3
• Contact the Professional and Executive Employment Office of the CES	1	2	3
• Rely on open applications for employment made by new graduates	1	2	3
• Use contacts made through the work experience programs of some courses	1	2	3
• Other (specify) _____			
_____	1	2	3

16 Please underline the technique that you believe is the most successful in generating a comprehensive list of applicants for a position in the organization.

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17 When recruiting new graduates and diplomates for your organization, how important are the following characteristics? (Circle one number for each characteristic)

Characteristics	Very important	Important	Not very important	Not important	
• Type of tertiary institution attended (e.g. a University, a College or an Institute)	1	2	3	4	54
• Overall academic attainment in a tertiary course (e.g. pass, honours, average marks, etc.)	1	2	3	4	55
• Specific areas of skill (as demonstrated by course majors, completed projects, etc.)	1	2	3	4	56
• Range of subjects covered in a tertiary course (general well rounded course)	1	2	3	4	57
• General part-time, casual or full-time work history as a student (number of jobs, type of job, etc.)	1	2	3	4	58
• Immediate 'value' to the organization (immediately applicable skills and knowledge, no need for further training)	1	2	3	4	59
• Membership of professional organization	1	2	3	4	60
• Interests, hobbies, etc.	1	2	3	4	61
• Age	1	2	3	4	62
• Course attendance pattern (full-time, part-time, sandwich)	1	2	3	4	63
• Applicant's knowledge of the vacant position	1	2	3	4	64
• Recommendation of academic staff of the institution attended by the applicant	1	2	3	4	65
• Applicant's career objectives	1	2	3	4	66
• Perceived future 'trainability' of applicant for a managerial position	1	2	3	4	67
• Other (specify) _____					
_____	1	2	3	4	68

18 Please underline the characteristic above that you believe is the most important when selecting a new graduate or diplomate. 69 – 70

19 What are your reasons?

_____

_____

_____

20 Below are listed nine areas from which your organization might have recruited new graduates or diplomates during the LAST THREE years. For each area indicate the main difficulty you have encountered, if any, in recruiting suitable new graduates or diplomates.
(Circle one number for each area)

Area*	Have not recruited from this area	No difficulty	Encountered difficulties because of: Poor training in basic principles	Lack of practical experience in course	Course too diverse, lacked specific knowledge	No supply of graduates or diplomates	Unrealistic career expectations of graduate or diplomate	Course too narrow and specialized	Other (specify below)
• Fine and Applied Arts	1	2	3	4	5	6	7	8	9
• General Humanities	1	2	3	4	5	6	7	8	9
• Social Sciences	1	2	3	4	5	6	7	8	9
• Business and Administration	1	2	3	4	5	6	7	8	9
• Applied Science and Technology	1	2	3	4	5	6	7	8	9
• Paramedical	1	2	3	4	5	6	7	8	9
• Engineering	1	2	3	4	5	6	7	8	9
• Mathematics and Computer Science	1	2	3	4	5	6	7	8	9
• Built Environment	1	2	3	4	5	6	7	8	9

* See question 5 for examples of specific fields of study included in these areas.

Other reasons not listed above:

Area	Reason

21 In the last 12 months in what specific occupational categories (e.g. Biochemistry, Accountancy, Graphic Design, Food Technology, etc.) have you had difficulty in recruiting suitable new or experienced graduates and diplomates?

Specific Occupational Category	Reason

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22 How have you attempted to overcome these difficulties?

23 Does your organization recruit new graduates or new diplomates from a particular University, College or Institute? (Circle one number)

Yes	1	12
Occasionally	2	
No	3	

24. If YES or OCCASIONALLY, from what specific fields and institutions? (Refer to question 5 for examples)

Institution	Field	Reason

25 How much time does your organization allow new graduates and diplomates to attend the following programs? (Circle one number for each program)

Program	No time allowed	Regularly up to 4 hrs per week	Regularly up to 1 day per week	Up to 2 days per year	Up to 5 days per year	Up to 2 weeks per year	Greater than 2 weeks per year	
• Formal induction program (Procedures, contacts, etc.)	1	2	3	4	5	6	7	13
• In-service or training programs offered by this organization (including conferences, etc.)	1	2	3	4	5	6	7	14
• Training programs offered by outside organizations (including conferences, etc.)	1	2	3	4	5	6	7	15
• Formal educational programs offered by Universities, Colleges or Institutes	1	2	3	4	5	6	7	16

26 Below are listed a series of items which describe some of the qualities or attributes of graduates and diplomates. Indicate the extent to which new graduates and diplomates (at the time of their appointment to your organization) should possess these characteristics.
(Circle one number for graduates and one number for diplomates for each item even though, for example, your organization might not employ diplomates)

Description of quality or attribute	The graduate				The diplomate			
	Very important	Important	Not very important	Not important	Very important	Important	Not very important	Not important
• Ability to communicate with others	1	2	3	4	1	2	3	4
• Ability to supervise junior staff	1	2	3	4	1	2	3	4
• Ability to make decisions	1	2	3	4	1	2	3	4
• Career adaptability	1	2	3	4	1	2	3	4
• Specific skills	1	2	3	4	1	2	3	4
• Ability in assigning priorities	1	2	3	4	1	2	3	4
• Self motivation	1	2	3	4	1	2	3	4
• Flexibility and receptivity to ideas	1	2	3	4	1	2	3	4
• Industrial relations skills	1	2	3	4	1	2	3	4
• General knowledge of related disciplines	1	2	3	4	1	2	3	4
• Analytical ability	1	2	3	4	1	2	3	4
• Fundamental research potential	1	2	3	4	1	2	3	4
• Ability to work in a team	1	2	3	4	1	2	3	4
• Ability to write reports	1	2	3	4	1	2	3	4
• Other (specify) _____								
_____	1	2	3	4	1	2	3	4

27 Please indicate the most important quality for:

(a) a new graduate _____

_____

(b) a new diplomate _____

_____

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28 Below are listed a series of items which describe some of the qualities or attributes of graduates and diplomates. Indicate the extent to which you consider the development of these qualities is the responsibility of employers or the tertiary education sector (e.g. Universities, Colleges, Institutes). (Circle one number for each quality or attribute)

Description of quality or attribute	Total responsibility of employers	Mostly the responsibility of employers	Both sectors equally responsible	Mostly the responsibility of the Universities/Colleges	Total responsibility of the Universities/Colleges	
• Ability to communicate with others	1	2	3	4	5	51
• Ability to supervise junior staff	1	2	3	4	5	52
• Ability to make decisions	1	2	3	4	5	53
• Career adaptability	1	2	3	4	5	54
• Specific skills	1	2	3	4	5	55
• Ability in assigning priorities	1	2	3	4	5	56
• Self motivation	1	2	3	4	5	57
• Flexibility and receptivity to ideas	1	2	3	4	5	58
• Industrial relations skills	1	2	3	4	5	59
• General knowledge of related disciplines	1	2	3	4	5	60
• Analytical ability	1	2	3	4	5	61
• Fundamental research potential	1	2	3	4	5	62
• Ability to work in a team	1	2	3	4	5	63
• Ability to write reports	1	2	3	4	5	64
• Other (specify) _____						
_____	1	2	3	4	5	65

29 For those items above that you have circled (1) ('Total responsibility of employers') and (2) ('Mostly the responsibility of employers'), how does your organization achieve these objectives?

_____

_____

_____

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30 Is your organization, or a representative from your organization, involved in:
(Circle one number for each item)

	Yes	No	
• the design and implementation of new courses in the tertiary education sector? (e.g. Universities, Colleges, Institutes)	1	2	66
• the evaluation of existing courses in the tertiary education sector?	1	2	67
• the design and evaluation of courses in the Department of Technical and Further Education?	1	2	68

31 If NO to any of the above items in question 30, would your organization be prepared to:
(Circle one number for each item)

	Yes	No	
(a) make a submission on the need for a new course on a specific area?	1	2	69
(b) send a representative to course advisory committee meetings at a University, College, Institute or Technical College?	1	2	70

32 If YES to question 31(b) above, from what level would you send a representative?
(Circle all appropriate numbers)

• Managing Director or Chief Executive Officer	1	71
• Section Manager or, for example, Chief Engineer	2	72
• Personnel Manager	3	73
• A middle level person from the appropriate area (e.g. Ward Physiotherapist, Dental Technician, Electrical Engineer, Graphic Artist, etc.)	4	74
• Any officer who was available at the time	5	75
• Other (specify) _____	6	76

33 For the area in which your organization employs the majority of its graduates and diplomates, list any major topics that you believe should be added to or emphasized in the current degree and diploma courses offered by Universities, Colleges and Institutes (NOT Technical and Further Education Colleges).

Degree Courses: Specific Field (e.g. Nursing, Data Processing) _____ 77

Major topics to be included or emphasized are: _____

_____

Diploma Courses: Specific Field (e.g. Journalism, Metallurgy) _____ 78

Major topics to be included or emphasized are: _____

_____

34 Do you have any comments on any aspect of the questionnaire or education and employment in general? 3 Col

k you very much for your time and co-operation.

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Questionnaire to Non-Employers

Australian Council for Educational Research

EDUCATION AND EMPLOYMENT

At the request of the Victoria Institute of Colleges we are investigating the attitudes of employers to the education and subsequent employment of graduates and diplomates from Australian Universities and Colleges of Advanced Education.

This questionnaire is directed to organizations who do not usually employ University or College graduates or diplomates. The questionnaire is generally concerned with the recruiting of employees for the white collar or supervisor/managerial positions.

We ask for your name and telephone number in case we wish to contact you in the future. Your answers to this questionnaire are confidential and no individual organization will ever be identified in any report.

In this study a graduate is defined as a person who holds a Bachelor's degree (e.g. Bachelor of Arts, Bachelor of Engineering) awarded by a University (e.g Melbourne University) or College of Advanced Education (e.g. RMIT, Swinburne College of Technology). A diplomate is defined as a person who holds a diploma (e.g. Diploma of Arts, Diploma of Art & Design) awarded by a University or College of Advanced Education. Persons who hold a certificate or a diploma from a Technical College (of the Department of Technical and Further Education) are not classified as graduates or diplomates.

Thank you for your time and co-operation.

Name of organization: _____

Address of organization: _____

_____ Telephone: _____

Name of respondent: _____

Position of respondent: _____

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1 What are the main activities of your organization?

_____

_____

_____

2 What was the approximate annual sales figure/budget allocation for your organization for the last financial year (1978-79)? (Check one box)

- Below $100,000 ☐
- $100,000 – $250,000 ☐
- $¼m – $½m ☐
- $½m – $1m ☐
- $1m – $5m ☐
- $5m – $20m ☐
- $20m – $100 m ☐
- Above $100m ☐

3 What was the approximate average size of your workforce for the last financial year? (Count part-time and casual workers in terms of full-time equivalents).
(Check one box)

- Below 25 ☐
- 26 – 50 ☐
- 51 – 100 ☐
- 101 – 200 ☐
- 201 – 500 ☐
- 501 – 1000 ☐
- 1001 – 5000 ☐
- Above 5000 ☐

4 To what extent has your annual sales figure/budget allocation and workforce size changed over the last three financial years?
(Check one box for sales/budget allocation and one box for workforce)

	Significantly increased	Increased	Remained constant	Decreased	Significantly decreased
• Sales/budget allocation	☐	☐	☐	☐	☐
• Workforce size	☐	☐	☐	☐	☐

5 When recruiting new senior-staff (e.g. the accountant, personnel officer, plant foreman, etc.) how important are the following characteristics?
(Check one box for each characteristic listed below)

Characteristics	Very important	Important	Not very important	Not important
• Specific areas of skill	☐	☐	☐	☐
• Work experience	☐	☐	☐	☐
• Immediate 'value' to the organization (immediately applicable skills and knowledge, no need for further training)	☐	☐	☐	☐
• Age	☐	☐	☐	☐
• Interests, hobbies, sporting activities	☐	☐	☐	☐
• Applicant's dress and general appearance	☐	☐	☐	☐
• Applicant's knowledge of the vacant position	☐	☐	☐	☐
• Applicant's confidence	☐	☐	☐	☐
• Sex of applicant	☐	☐	☐	☐
• Applicant's career objectives	☐	☐	☐	☐
• Perceived future 'trainability' of applicant for a managerial position	☐	☐	☐	☐
• Other (specify) _____	☐	☐	☐	☐

Please underline the two most important characteristics in question 5

7 Has your organization ever employed (either in a full-time or consulting job) a person with a degree or a diploma (not a certificate) awarded by a University or College?
(Check one box)

Yes ☐ Not sure ☐ No ☐

8 If you have answered YES or NOT SURE to question 7, why do you no longer employ a person with a degree or a diploma?

9 If you have answered NO to question 7, could you give a reason?

10 Does your organization plan to employ a person or persons with a degree or a diploma within the next five years?
(Check one box for (a) and (b)

(a) Degree Yes ☐ Undecided ☐ No ☐

(b) Diploma Yes ☐ Undecided ☐ No ☐

11 If NO to either 10(a) or 10(b) could you give your reasons?

(Go to question 16)

12 If YES to either 10(a) or 10(b) in what specific area/s (e.g. accounting, structural engineering, graphic design, etc.)?

13 If YES to either 10(a) or 10(b) what are the reasons?

14 If YES to either 10(a) or 10(b) do you foresee any problems in finding suitable graduates or diplomates?

Yes ☐ No ☐

Please turn over

15 If YES to question 14, how do you plan to overcome these problems?

16 Has your company or an employee of your company ever:
(Check one box for each item)

	Yes frequently	Yes Occasionally	No Never
• employed students from a University or CAE on a full-time or part-time basis?	☐	☐	☐
• employed apprentices enrolled in a course at a Technical College?	☐	☐	☐
• contacted a University or CAE about employing a graduate or diplomate?	☐	☐	☐
• made a submission concerning the development of a course at a Technical College?	☐	☐	☐
• attended open days or talks held by a University or CAE?	☐	☐	☐
• attended open days or talks held by a Technical College?	☐	☐	☐
• enrolled in a course at a University or CAE?	☐	☐	☐
• enrolled in a course at a Technical College?	☐	☐	☐
• acted as a member of a committee at a University or CAE?	☐	☐	☐
• acted as a member of a committee at a Technical College?	☐	☐	☐
• Other (please specify) _____	☐	☐	☐

17 Do you have any general comments on the kinds of people your organization prefers to recruit for senior positions?

18 Do you have any general comments on the education process in Universities or Colleges of Advanced Education?

APPENDIX III

DETAILED RESEARCH MATRIX

DETAILED RESEARCH MATRIX

Key Research Areas

Groups Surveyed

Groups Surveyed	Background Information (Chapter 6)	Employment (Chapter 7)	Expectations (Chapter 8)	Recruitment (Chapter 9)	Attitudes (Chapter 10)	Related Issues (Chapter 11)
New Students	Cell 1 •Age & sex (Q1,Q2) •Secondary school education (Q3-Q5) •Educational history (Q6)	Cell 6 •Employment history (Q12)	Cell 11 •Job expectations (Q10) •Job prospects (Q11)		Cell 16 •Qualities of new graduates and diplomates (Q7)	Cell 20 •Ideas of work (Q8, Q9) •Future plans (Q13)
Final Year Students	Cell 2 As above	Cell 7 •Employment history (Q12)	Cell 12 •Job expectations (Q10) •Job prospects (Q11)		Cell 17 •Qualities of new graduates and diplomates (Q7)	Cell 21 •Ideas of work (Q8, Q9) •Future plans (Q13) •Job seeking strategies (Q14)
Graduates and Diplomates	Cell 3 As above	Cell 8 •Employment history (Q9) •Job satisfaction (Q10)	Cell 13 •Job expectations (Q8) •Ratings of Jobs (Q8)		Cell 18 •Qualities of new graduates and diplomates (Q7) •Development of qualities (Q7)	
Employers	Cell 4 •Activities •Size (Q1-Q2) •Educational qualifications of employees (Q4)	Cell 9 •Employment trends: past and future (Q5-Q8) •Sources of graduates and diplomates (Q9-Q11,Q23,Q24)		Cell 14 •Recruiting techniques (Q15,Q16) •Recruiting style (Q17-Q19,Q12-Q14) •Recruiting difficulties (Q20-Q22)	Cell 19 •Qualities of new graduates and diplomates (Q26, Q27) •Development of qualities (Q25, Q28,Q29)	Cell 22 •Involvement with tertiary education (Q30-Q32) •Other problem areas (Q33,Q34)
Non-employers	Cell 5 •Activities (Q1) •Size (Q2-Q4)	Cell 10 •Employment trends (Q7-Q11) •Future areas of employment and problems (Q12-Q15)		Cell 15 •Recruiting style (Q5,Q5,Q17)		Cell 23 •Involvement with further education (Q16,Q18)