PATHWAYS:

A POLICY STUDY.

MINOR THESIS PRESENTED IN (PARTIAL) FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF EDUCATION (EDUCATIONAL ADMINISTRATION)

IN THE FACULTY OF EDUCATION AT THE UNIVERSITY OF MELBOURNE.

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B.A., Dip. Ed. (Melb), B.Ed. (La Trobe)

1994.
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DECLARATION OF ORIGINALITY

This thesis contains no material which has been accepted for any other degree in any university. To the best of my knowledge and belief, this thesis contains no material previously published or written by any other person, except where due reference is given in the text.

Signature: 

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### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>TAFE</td>
<td>Technical and Further Education</td>
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<td>VET</td>
<td>Vocational Education and Training</td>
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<tr>
<td>SUT</td>
<td>Swinburne University of Technology</td>
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<td>DEET</td>
<td>Department of Employment, Education and Training</td>
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<td>OTFE</td>
<td>Office of Training and Further Education</td>
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<td>NBEET</td>
<td>National Board of Employment, Education and Training</td>
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<td>CAE</td>
<td>College of Advanced Education</td>
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<td>AVCC</td>
<td>Australian Vice Chancellors' Committee</td>
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<td>RMIT</td>
<td>Royal Melbourne Institute of Technology</td>
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<td>VUT</td>
<td>Victoria University of Technology</td>
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<td>ANTA</td>
<td>Australian National Training Authority</td>
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<td>HECS</td>
<td>Higher Education Contribution Scheme</td>
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<td>OECT</td>
<td>Outer Eastern College of TAFE</td>
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<td>WMCOT</td>
<td>Western Metropolitan College of TAFE</td>
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<td>ACTRAC</td>
<td>Australian Council for Training Curriculum</td>
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<tr>
<td>VTAC</td>
<td>Victorian Tertiary Admissions Committee</td>
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<td>MIS</td>
<td>Management Information System</td>
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ACKNOWLEDGMENTS

In presenting this minor thesis, I would like to acknowledge the help and advice of my supervisor, Dr. Richard Teese, of the Department of Social and Educational Studies, Institute of Education, The University of Melbourne.

Dr. Teese's knowledge and understanding of the policy issues, especially in relation to the Victorian context, and his guidance in organisation of the thesis, have been invaluable in assisting the development and refinement of my own work.

I would also like to acknowledge the support given to me at Swinburne University of Technology, both by the Vice- Chancellor, Iain Wallace, and by the Director of the Technical and Further Education (TAFE) Division, Peter Veenker, in encouraging me as Pathways Co-ordinator at Swinburne to take a wide perspective of the project and consider its implications to the institution, the region, and wider audiences.
ABSTRACT

Improving pathways between the sectors is an aspect of educational policy within Australia which has risen to high visibility in recent years. It has been an important part of Commonwealth policy on reform of both higher education and training sectors.

Improved pathways are seen to assist in up-grading workers' qualifications in the minimum time, and more cost-effectively; to assist in enabling a better balance of post-secondary education and training to be provided; to increase the status, visibility and use of TAFE middle-level credentials; and to achieve better equity in higher education provision. The economic and equity arguments are married, by asserting that a wider base will be ultimately more economical. Of equal importance is the convergence of vocational and general education as a preparation for life and work.

Using the Swinburne University of Technology Pathways Project 1992-3 as a case study, this paper demonstrates that valuable models of more highly articulated curriculum and structures are possible within a pathways concept. In addition, improved credit transfer agreements and implementation strategies at institutional level are shown to materially assist TAFE students' access to higher education courses.

However, there are limitations to how far "Pathways" type approaches can succeed in implementing government policy while the sectors are encouraged to remain so polarised, and while universities have no real incentive to increase their TAFE articulating students. While they remain strictly vocational in nature, TAFE qualifications cannot achieve full recognition in a degree. A more generalist qualification, like the associate degree, would arguably be more successful in creating a convergence of general and vocational education, and greater credit transfer. Likewise, an expansion of TAFE's mission could bring a better acceptance of TAFE as an alternative higher education pathway.
"Pathways" is the term used in education today to describe connections between the sectors. Secondary, TAFE, higher education; indeed, the workplace itself: all are part of the continuum of education and training, and all serve the community in responding to the life-long needs of citizens and workers.

"Pathways" are the links between the sectors, most ideally conceived in terms of congruent curriculum (articulation) but also referring to different ways of ordering and presenting courses in each sector so as to facilitate movement from one level of credential to another; and referring to recognition of prior learning in order to give advanced standing in the next desired course (credit transfer). The influential report, Young People's Participation in Post-Compulsory Education, (the Finn Report) gives a comprehensive definition of the term 'pathways' as it is used in this contemporary context;

"The committee has used the concept of 'pathways' in this Report as a way of describing and dealing with the processes associated with movement from compulsory education, through post-compulsory education and training, and between education, training and employment."(1)

The Report also explores the connotations of the word and points to the inter-relating notions of lifelong learning, smooth connections and clear signposts along the way that it encompasses.(2)
Schematically, the "pathways" connections might look like this:

FIG. 1.

There are two-way links between all the segments in this framework, even to a limited extent between universities and schools (in the reverse direction) with the recent development of specialist programs for gifted students in secondary schools currently being undertaken, which give students some credit in an undergraduate degree. The most emphasis in recent times, however, has been in the pathways between TAFE and work and schools, and TAFE, work and university courses.

Finn has a diagram (Appendix 1) which shows the ideal pathways that should exist at the various levels, including the gaining of credit at various levels—traineeship, advanced certificate, and associate diploma—which will facilitate entry to, and movement through, the next level of credential. It also shows the likely relationships of the various levels with industry standards and awards. Not many curriculum pathways will be as clear-cut as this schema indicates. Competency levels and industry awards are not always neatly matched. Sue Christophers, member of the Swinburne Pathways Reference Committee, and also a member of the national working party establishing the National Qualifications Framework, indicated in a report to the Reference Committee during 1993 that the attempt to match competencies and awards for the Framework had been abandoned. In addition, national competencies are not yet agreed for a number of course areas, and curriculum decisions need to be taken in the absence of such national competencies. This fact was noted in the case of the Swinburne Pathways design curriculum both by the course Industry Advisory Committee, and the Design Standing Committee of Arts Training Victoria, and the recommendation made,
as is common, that appropriate recognition be made of draft national competencies be made once they are published.

Nevertheless, the diagram shows clearly the pathways that will logically be made. For TAFE to higher education pathways, in particular, one suggested curriculum concept has been the so-called "y' configuration, which maximises efficiencies and possibilities of credit transfer:

FIG 2.

Associate Diploma \( \rightarrow \) Degree

\( \text{(common)First Year} \)

This configuration, among others such as block credit and specified and unspecified credit were considered in the curriculum studies, and will be further referred to there.
CHAPTER 1: THE POLICY CONTEXT.

Background.

"Improved Pathways" as an aspect of policy at institutional, state, and federal level has risen to high visibility in the last few years, though concepts such as credit transfer and articulation are not new. Attempting to trace the definitive beginning of a "pathways" policy leads one ever further back, and it is difficult to determine a precise birth date. Certainly as far back as 1975, the Schools Commission recommended improvements in credit transfer in higher education, partly in response to the needs of the burgeoning tertiary sector at that time. In Victoria, the influential Blackburn Report of 1985 and the Labor government's economic masterplan "Victoria: the next decade" of July 1987 underlined the need for educational reform which included more adequate pathways to and from education, training, and work. The first and second annual reports of the National Board of Employment, Education, and Training (NBEET) on credit transfer and related issues, November, 1992, and November, 1993, give a comprehensive context to recent initiatives and related developments in the area at a national level, pointing out that questions of consistency and uniformity remain in the forefront as issues. (3)

There are compelling economic, educational and equity justifications for the current interest in improving pathways between the sectors, and for making some serious attempts to implement such policy in ways which have not been attempted before. Such activity is played out within an international context which re-inforces and, indeed, has partly determined this policy course of our government.

Policy documents over the last seven years since, and including, Minister Dawkins' "Green" and "White" Papers of 1987 and 1988 (4), mount a persuasive case that improvement in pathways between the sectors is pivotal in the reform of higher
education. It is, moreover, argued that improvements in pathways will assist in the training reform agenda - the micro-economic reform which will require the creation of a flexible and multi-skilled workforce. Award re-structuring means that more formal links are being established between industry classifications and qualifications; thus making it more important for workers to be able to access education and training, and in the most cost-effective way possible. The third major parameter for support of improved pathways is the belief that it can assist in creating both the reforms mentioned above by working towards an education and training system that combines the imperatives of both general and vocational education.

In late 1991, the Victorian Government invited submissions from higher education institutions for Pathways projects which would facilitate the entry of TAFE students into higher education. Institutions were to commit themselves to defining TAFE students as one of the categories of their Department of Employment, Education and Training (DEET) funded load, and to reaching certain specified target quotas for articulating students. They were to maximise available credit, and they were to document this information clearly. They were to formalise and extend the relations between the sectors. Swinburne University of Technology, an intersectoral institution with a substantial TAFE component of students received the largest grant (one million dollars) and signed its Pathways Agreement with the Office of Higher Education in July, 1992. (5)

**Benefits of a Pathways Policy.**

The essence of my thesis is that improved pathways between the sectors will prove by means such as the Swinburne Pathways Project to be of considerable benefit both to students and to institutions, and to our society; but that these improvements, by themselves, are not likely to be totally successful in carrying the governments' ambitious mixture of social and economic policy with regard to the reform of higher
education, while the pathways link sectors that remain polarised. I hope to provide some evidence for this claim by showing what results were possible and also what results were not achievable in this project.

I will be arguing that pathways between the sectors can and have been improved dramatically, as the Swinburne example will show, and a great deal of creativity and intelligence applied to making better links, more closely aligned curriculum, and more transparent structures to aid our client populations. Nonetheless, TAFE's proposed new enhanced role in the tertiary education sector may not succeed, and will not be sold to the public, until the rhetoric that is paid to "making TAFE less narrowly vocationally specific" is translated into some genuine curriculum reform which is more than an alignment of curriculum to industry standards. And while the sectors are encouraged to be separate, the same inequities and class distinctions that have been observed already between TAFE and universities will continue to operate (6). The new multi-skilled, technologically adept work-force may remain an illusory dream unless the VET sector does achieve enhanced status and desirability in the eyes of the community.

The wider policy context.

At the national and international level, there are powerful social, cultural and economic pressures for an increased investment in education; and equally strong pressures to be more efficient and accountable with our education dollar. Dawkins argues that we need a better educated and more skilled population to rebuild the country and take us successfully into the 21st. century as a competitor in the world economy (7). We need to broaden the base of participation in higher education and create more access for traditionally disadvantaged groups. We need to be able to cope with the concept of 'mass', rather than 'elite' tertiary education, as student retention to Year 12 soars and demand for higher education grows. Yet this is to be achieved more effectively and
efficiently than in the past. Governments are increasingly requiring educational institutions to be more accountable, and to consider other avenues of funding than public moneys.

None of this is peculiar to the Australian context. In North America, in Britain and in Europe, similar pressures exist, and post-compulsory education and training has been under the same intense scrutiny. After all, education not only fits us for living, it fits us for productive work and participation as a citizen in our society. Therefore the proper kinds and amounts of post-secondary education and training available are quite significant in all societies, as is the judgment as to whether they are doing their job properly.

The judgment seems to be, at least in this country and also in the USA (though for rather different reasons) that we have got it wrong in higher education. We have expanded our universities in the seventies and eighties: professional preparation and generalist education in the arts and sciences. But this has been achieved at the expense of technical and vocational education. Credential creep and the status of a university degree have ignored the country's needs. With high unemployment and economic recession this can no longer be tolerated.

Dawkins' major arguments and their consequences.

Minister Dawkins in his Green and White Papers of 1987 and 1988 outlined the major framework for the reform of higher education in Australia as the Labor government defined it. There are some important central philosophies in these papers that also inform the thinking of the major reports that followed, and which were the direct policy antecedents of the Pathways projects in Victoria: the Finn Report of '91, the Carmichael Report of '92 (8), and, in Victoria, the Deveson Report of '92 .(9)
One important policy view is stated early in the White Paper: the government...
"reaffirms its view that higher education institutions should not be isolated from the
major changes occurring in Australian society and the economy. Rather, they should be
one of the prime agents for change...." (10)

By contributing to teaching, research and innovation, universities can demonstrate their
relevance. Higher education's traditional functions of intellectual inquiry and
scholarship are valid; but it is a question of balance and priorities.

This is a significant argument, for from it flow other consequences. One of the most
significant, of course, was the development of the Unified National System whereby
earlier distinctions between universities and CAE's (Colleges of Advanced Education)
were eliminated. Institutions were to be funded in the future not on a historic basis, but
on the basis of merit and achievement, in order to encourage them to be more efficient,
flexible and responsive to changing national needs, including economic needs.

If it is true that higher education must take some cognisance of its operations as a part
of the economic health of the country, then it is logical for universities to look at the
totality of funding for post-secondary education that comes from the public purse, and
perhaps recognise that technical and further education should also be funded as an
equal partner, and that the question of a balance of provision, particularly for sub-
degree two-year courses, is a legitimate debate.

The AVCC, in its response to the Finn Report in its meeting of 17 March 1992,
proposed the introduction of a joint TAFE/University two-year module. This was
proposed to be designed in collaboration with TAFE and higher education, and be
offered through institutions from either sector. The proposal included a common first
year module, meant to address concerns raised in the Finn Report relevant to the
AVCC: i.e. "the need for more generalised vocational education, the need for better
and clearer articulation paths between the sectors, and the need to raise the public recognition and acceptance of TAFE." (11) The preliminary paper written by Professors Geoff Wilson and David Beanland suggest as an alternative the 'y' structure referred to earlier in this paper, as an easier way of avoiding the difficulties of interface between a wide range of TAFE and university courses. This model, and subsequent discussions of it between the Victorian intersectoral universities (Royal Melbourne Institute of Technology, Victoria University of Technology, and Swinburne University of Technology) was the basis of Swinburne's move to develop an associate degree.

There is another vital strand in the argument, a central plank for the influential Finn Report and others following it, which arose from Dawkins' Green and White papers. This is the argument for convergence of general and vocational education, which is seen as important both from personal and social points of view and from economic ones.

"The traditional distinction between broadly based and vocationally specific education is narrowing, and the long term interests of students will be best served by courses that incorporate elements of both 'vocational' and 'general' education".(12)

Therefore there is some point to attempting to marry the best of both systems by developing better real articulation between the courses and levels. The argument is that in Australia we have valued and nurtured general education to the detriment of vocational education, and that we are now suffering the effects of that preference.

**Applying the Policies: what they mean.**

The Mayer Committee which was set up by the government in order to work out how to implement the major recommendations of the Finn Committee emerged with a set of
Key Competencies which were to be related to both work and learning outcomes, and were thus to express the convergence of general and vocational education. These competencies are not dissimilar to ones developed in Britain and the US, and reflect a common concern with educational outcomes. The bulk of effort in implementing the key competencies so far has been in attempting to shift secondary education to be more inclusive of vocational outcomes, and strengthen the links between schools and TAFE. A very similar movement has occurred in the US in recent years with Tech Prep in high schools and its close links to community college vocational courses. This has been generally successful, after a slow start, and has spread nation-wide with the assistance of federal funding grants.

We have in Australia two quite distinct sectors in post-secondary provision: firstly technical and further education, providing entry and middle level training in vocational fields, and general further education courses, but predominantly driven by industry and government demands; and secondly higher education, traditionally more broadly based, research driven, as well as a training ground for the professions; and relatively independent. We have also a varied history of technical education at secondary level, mostly quite separate from more general education. As Richard Sweet so succinctly says: "Our vocational preparation system...... remains small (by international standards) because we have, for one reason or another, persisted with the view that 'training' has nothing to do with 'education' ..........This isolation of the development of occupational competence from the mainstream of education has affected students' willingness to participate in, and their parents' willingness to encourage their children to take what is seen to be a less prestigious and educationally more limiting option. It has resulted in vocational preparation largely being attached to paid, productive labor, and this has had consequences for employers' willingness to provide it and to pay for it."(13)
The development of the two sectors could be a fascinating and important study of class in Australia as it relates to our education and training systems, with historical references to our inheritances from Britain, and consideration of such issues as why we did not develop a tradition of liberal education such as that which emerged in North America. That is beyond the scope of this study: though I think such research may well reveal insights as to the likelihood of this country being able to incorporate major changes to post-secondary education while separating "training" concepts from those of "education".

It is interesting to see how closely the views about nurturing general education to the detriment of vocational education are mirrored in the US federal government's SCANS report of June, 1991, which reached the disturbing conclusion that more than half of US high school graduates leave school without the knowledge or foundation required to find and hold a good job.(14) A study of community colleges in the US and their experiences in provision of middle-level technical and vocational training, re-inforces the transcendence of general over vocational education even in institutions which clearly articulate vocational training as one of their primary missions.(15) Clearly we are not alone in our concerns.

Part of the policy argument put is that by improving pathways between the sectors, and by increasing TAFE provision, particularly in two year post-secondary courses, much of the current imbalance between higher education and applied and technical studies will be addressed, and the status of the latter increased. (16) This is a very significant argument, both for what it implies and for what it excludes. What it excludes is a thorough-going reform of either TAFE or higher education in order to really answer how one might marry 'general' and 'vocational' education and training, and I will be arguing later that this exclusion will prevent the enduring reform of higher education that the government is seeking. What the argument implies, though, is equally illuminating, because it highlights the other major strand in policy thinking; and
that is the equation of equity with economic outcomes. The accompanying notion that
status will be conferred on technical/vocational education by having more of it, I
believe, is a serious flaw in the argument.

Dawkins, in both the Green and White Papers, and Finn, and to a lesser extent
Deveson, argue strongly that greater equity in access to educational opportunities
equates with a stronger economy, because of the larger and more diverse pool from
which we draw our skilled workforce. Despite the cost factors involved in provision
for disadvantaged groups, and despite admitting that transfer rates to higher education
could not be expected to improve or change their composition without additional
places, the government does not seem to consider a view that economic efficiency
might, in fact, be more achievable by nourishment of an elite. (17) In addition, Finn's
growth targets for the year 2001 are heavily dependent on strong co-operation
between the sectors. He points out that some seventy percent of the workforce in 2000
are already beyond the years of post-compulsory schooling. (18) The up-grading of the
Australian workforce over the next decade cannot therefore simply depend on the
training of youth.

Equity arguments are, in fact, fundamental to the development of a policy on
pathways. The principal objective is, as indicated earlier, to broaden the base of
participation in higher education, by providing access for groups traditionally under-
represented, including TAFE students. Better and more systematic credit transfer will
benefit those students who already have a proven work and study background, and
enable them to progress through their studies more expeditiously.

The policy papers do not limit co-operation between TAFE and higher education
institutions to improvements in credit transfer, though Dawkins argues strongly for
(and Finn supports) a National Credit Transfer Agency as a logical way of
consolidating the process. That agency has not yet eventuated, although the work of
the AVCC Credit Transfer Pilot Project is carrying out some of the same intentions.
Most universities did accept the six basic principles of credit transfer. A diversity of pathways is recognised as being worthy of exploration at the local level: such initiatives as TAFE feeder courses from which students progress to courses in higher education; teaching of the early years of higher education courses under contract by TAFE; use of TAFE premises by higher education staff for teaching their courses; and the use of TAFE library and related facilities by external higher education students, supplemented by a tutorial system, are referred to in the White Paper (19).

**Additions to policy development.**

Finn (as we have noted) argues that appropriate recognition of TAFE courses for advanced standing in higher education will lead to improvements in the status and value of TAFE pathways, and greater equity in the treatment of students. Finn also sees improved status for TAFE in better labour market and employment links. Increases in educational opportunities in general should accrue from being able to 'assemble' a recognised qualification from different programs, and students with similar competencies should also receive equal credit. He also recognises other useful links such as co-operation in curriculum design, and provision of bridging arrangements to facilitate advanced standing for TAFE entry students (20).

Deveson, taking up the Commonwealth government's initiatives and applying them to Victoria, incorporates these ideas in his recommendations, but focuses on some additional strategies: in particular a major expansion of two-year programs for school leavers and adults in both the training sector and universities. Some growth in generalist two year programs should take place in universities, especially the intersectoral ones; and advanced technical and vocational training development is better placed in TAFE. Deveson argues for a continuum of university and TAFE institutions for the future, recognising that Victoria already has several intersectoral institutions, and that more may look like them eventually. However, he argues that
specialised vocational institutions (as for example in western Europe) gain status from their specialisation, so the sectors should be preserved, but made more equal. In this way the economic and equity objectives of the government may be met. This is a key concept ('the sectors should be preserved, but made more equal') which I will be testing by reference to the Swinburne case study.

**Applications of Policy: recent events.**

Institutions, especially the traditional universities, have been slow to take up the initiative of implementing credit transfer, course articulation, or any of the other pathways delineated here, until external pressures emerged during the last seven years. Dramatic increases in the demand for higher education, but not an equal demand for TAFE courses, have led to re-thinking of priorities. Finn's recommendation of 'a guaranteed place' for all students for two years of post-compulsory education, is based on expansion of places in TAFE as much as in schools. The development of the Australian National Training Authority (ANTA) and its taking over of responsibilities for growth funding for TAFE, while not satisfying the government's intentions entirely, brings TAFE into a national funding arena for the first time.

In addition, events such as the introduction of the Higher Education Contribution Scheme (HECS) which required students to contribute a share of tuition costs for all subjects undertaken, also increased the pressure at client level for more equitable and systematic recognition of prior learning. Institutional amalgamations brought into many of the new universities a range of course levels, including sub-degree courses. Moves toward expansion of educational opportunities through open learning and multi-modal learning challenged traditional entry and exit points. Local arrangements between TAFE colleges and universities proliferated.

So the present situation began to unfold.
This consideration of the recent historical context has demonstrated that the notion of developing formal or recognised 'pathways' between the sectors has a substantial basis in contemporary educational policy and planning; and in fact is important in welding together much of the social and economic theory underpinning this policy. In Chapter Two I explain the focus of the Swinburne project and provide a conceptual framework for consideration of my understanding of a successful pathways project.
CHAPTER 2: SWINBURNE: THE PATHWAYS PROJECT.

Focus of the Study.

Swinburne University of Technology (SUT) is one of the newest universities in Australia, having been proclaimed as recently as 1992. Prior to this it was known as Swinburne Institute of Technology, and it has always had a history of provision of applied and technical education, dating from its foundation as the Eastern Suburbs Technical College in 1908. As a former College of Advanced Education it had been a degree granting institution since 1974. There were in 1993 faculties in arts, applied science, engineering, business, and a School of Design. Of recent years the profile of the higher education division has expanded and now encompasses a range of research and post-graduate programs. Swinburne is one of the very few institutions to have achieved university status in Australia without being required to amalgamate with at least one other institution.

The institution has always been intersectoral, and it is Swinburne's boast that its students can, and have, moved from apprenticeships through to PhD programs within the same campus. The Act proclaiming it a university defined two Divisions within Swinburne: Higher Education and TAFE. At the same time, the TAFE Division was augmented by an amalgamation of Swinburne TAFE College with the former Prahran TAFE College, thus making the TAFE proportion roughly the same as its higher education partner in terms of student numbers, and giving it three large TAFE schools: Business, Engineering and Industrial Science, and Social Sciences and Arts; a profile which is in some respects quite contiguous with the higher education division.

In addition to encompassing a TAFE Division, and thus enshrining its identity as an intersectoral institution, Swinburne was also given responsibility under its Act to be the major provider of tertiary education for people living in the outer eastern region of
Melbourne. This is a region which traditionally has experienced very low participation rates in higher education. Therefore Swinburne's move to a campus at Mooroolbark (with considerations of other locations in addition), and its acceptance of this new major role in addition to its provision at the inner-urban campuses of Hawthorn and Prahran, gave it a new strategic focus, allying both regionalisation and articulation in an attempt to harness all the resources possible to fulfil its goals. During the life of the Pathways project, I was asked to write a paper for the Vice-Chancellor on Regionalisation and Articulation in consultation with internal and external stakeholders. This paper was one of nine papers in the document "The Way Ahead" published within the university at the end of 1993, which was to be the basis for the re-structure of the higher education Divisions, and provided the basis for recent strategic planning documents. The paper highlights Swinburne's view of the importance of developing clear pathways between all sectors in its region as a way of effectively responding to unmet demand and to government policy. (24)

**Why Swinburne was chosen.**

Tom Roper, the then Minister for Employment, Post Secondary Education and Training, said in a media release of 6 May, 1992, announcing the pathways grant, that 'this million dollar grant reflects Swinburne's plan to become Victoria's first truly intersectoral institution', and 'It is an acknowledgment of Swinburne's long-term commitment to co-ordinated access by all eastern suburbs students to programs at their Hawthorn and Mooroolbark campuses, local TAFE colleges, and eventually at the proposed new outer eastern suburbs tertiary campus.' Pathways grants were 'the first step towards actioning the recommendations of the Deveson Taskforce on Pathways Report'.(25) In the Deveson Report Swinburne was noted as having produced proposals emphasising joint curriculum design between TAFE and higher education institutions as critical to the success of credit transfer arrangements, (26)
and it is reasonable to suppose that the government felt that the institution was accurately reflecting its policy intentions in awarding the grant.

**Focus of the Pathways Project.**

Swinburne's Pathways submission proposed 'a strategy aimed at a swift and dramatic improvement in the availability of intersectoral pathways while preserving the specific purposes of each sector', and specified a targeted increase of articulated places in higher education from 67 in 1991 to 420 in 1994. It also emphasised the suitability of Swinburne for this proposed model since it already had an agreement with the (then) Office of the State Training Board regarding articulation, was committed to the development of a network involving flexible learning approaches in the outer eastern region in conjunction with the Outer Eastern TAFE College, and had the necessary human resources required to undertake the challenging work required to achieve these outcomes. (27)

The nature of these claims in Swinburne's submission are significant, because they would be instrumental in developing an agreement with Swinburne which is a little different to most of the other Pathways agreements negotiated with Victorian universities at this time. For example, it specifies actual targeted numbers for 1994 (and also mentions initial cohorts of 50 in each Faculty with the exception of Arts), which not all agreements did. It also specifies the development of flexible learning packages as a means of providing bridging or extension units most effectively, and the design of a prior learning assessment system, most probably in recognition of Swinburne's mission and connections in the outer east.

Most importantly, it emphasises a curriculum development strategy which was to be aimed at an integrated curriculum framework, including needs analysis, curriculum review, and the writing of conversion units, perhaps in flexible learning mode. (28)
KEY COMPONENTS OF EFFECTIVE PATHWAYS PROGRAMS.

Fig. 3
This case study, therefore, focuses particularly on the key curriculum developments of the project as they highlight the pathways strategies in practice. However, it is recognised that curriculum is only one of a range of elements that are essential to the implementation of a successful "pathways" program. Figure 3 highlights the factors that the Swinburne experience suggests are relevant to operating a successful program.

What would a successful pathways project be?

According to the Swinburne University Pathways Agreement with the government, the following criteria were seen to be crucial in determining the success or otherwise of the project:

1. Target figures achieved of articulating students.
2. Credit transfer of three semesters where possible for an associate diploma in a three-year undergraduate degree.
3. Evidence of systematic and agreed credit transfer policy for the whole institution.
4. TAFE articulating students guaranteed as a category of entry to the university.
5. Procedures in place for more transparent information to students regarding recognition of prior learning.
6. Some models of a more integrated approach to articulated curriculum development.
7. Flexible learning applied to bridging or conversion courses to facilitate efficiencies of operation.
8. Greater recognition and promotion of two-way credit transfer is developed. (Ref)

Because Swinburne had concentrated on integrated curriculum development as a focus in its pathways submission, No. 5 in this list (models of curriculum) assumed greater significance at this institution than it might have in other pathways projects. It was seen as a way of accelerating Swinburne's development as an intersectoral institution, and a way of creating greater and more enduring forms of credit transfer and articulation. Analyses of the curriculum development is therefore significant.
While the Pathways agreement delineated certain concrete results by which the success of the project could be measured, in a more macro sense the university was concerned to "mainstream" the gains of the Pathways project into institutional practices, so that the culture of the place accepted TAFE students as viable, "ordinary", or legitimate.

Important factors in the implementation of "pathways" into the institutional life of Swinburne were seen to be:

1. Executive vision and leadership.
   The support, promotion, and active leadership in the work of Pathways by senior administration, Council and key external figures was an important ingredient in targeting Pathways as a priority for the university in these years and assisting in creating the climate for change.

2. Management Co-Ordination of the project.
   It was important to co-ordinate the various curriculum projects and have someone maintain an overview so that lessons learned in one discipline area might be applied elsewhere. Likewise mistakes might be avoided. As well, the co-ordinator needed to be able to map the range of ways that changes needed to be implemented within the institution, such as; developing credit transfer policies and procedures; selection policies and practices; monitoring, evaluating, and recording progress of students; devising staff development exercises; instituting publicity and promotion.

3. Integrated Curriculum Development.
   Once curriculum development was completed in a particular discipline, there needed to be ways set up for on-going curriculum development and review across the university, which enabled it to benefit by the curriculum already developed and to exploit further possible intersectoral advantages. Flexible delivery packages were to be incorporated into curriculum design.
4. Staff development.
For the staff to "own" Pathways, it was vital for them to be involved and to understand and accept the concepts. This was as important as leadership from the top. At each step in the project: such as initial review of each sector's curriculum; or development of the MIS to enable students to receive credit transfer on enrolment; in-service exercises would be vital, and would need to be regarded as an on-going activity, since staff do not remain in static positions.

5. Information Systems.
Transparent information systems for students, staff and the general public encompass a range of information media, both formal and informal. Not only were the systems and policies to be in place, but they must be seen to be by their potential clients. (Fig. 2)

The Plan of the Work.

Chapter 1 has defined the concept of Pathways and placed it in a wider policy context.

Chapter 2 provides a focus for this study by explaining Swinburne's particular emphases in the Pathways concept, and suggests a framework within which a successful Pathways project could be judged.

Chapter 3 considers four curriculum studies undertaken at Swinburne, and defines and evaluates each as an aspect of integrated curriculum development.

Chapter 4 considers all other implementation aspects of the project, and makes an assessment of the overall success of the project in these terms.

Chapter 5 extends and enlarges this assessment by considering pathways in a larger context, and comes to some conclusions which may be inferred from the case studies.
CHAPTER 3: CURRICULUM STUDIES

1: THE ASSOCIATE DEGREE IN SOCIAL SCIENCE.

The Concept.

Swinburne’s nature as an intersectoral institution, its acceptance of that role as part of its long-term strategic planning, and the encouragement given by the AVCC proposal for a generalist two year credential, were important reasons for Swinburne to "test the waters" with the concept of the Associate Degree. Although both RMIT and VUT seriously considered the concept as part of their Pathways Projects, neither has as yet gone ahead with the idea. Exploratory work in attempting to develop the credential as an associate diploma within the TAFE system were not supported, though individual colleges have since expressed interest. Thus the Swinburne initiative has been a new pathway for Victoria.

The curriculum proposal was carried out as part of the Pathways project in 1992, but its development was the subject of a DEET awarded special national pilot, again for $1 million dollars, to be funded over 1992, 1993 and 1994. The focus of the proposed course arose from the preliminary studies of the Social Sciences and Arts inter-sectoral working party, which discovered a lack of good credit transfer capacity in the social sciences and humanities. There are few TAFE associate diplomas in the social sciences, and those that exist are very directly vocationally specific. Swinburne TAFE offered the associate diploma in social science (child care) which produces a qualified mothercraft nurse and child care worker. It also provided the associate diploma in social science (community development). Both these credentials lead directly in other institutions to the third year of a vocationally related degree. There was not much congruence between these qualifications and the multi-disciplinary bachelor of arts at SUT, although some useful work was done in developing several electives, for
example in sociology, in the TAFE associate diplomas which would generate additional specific credit in the arts degree. In addition, it has been traditionally difficult to develop more generalist associate diplomas within TAFE, particularly those that cover more than one defined industry sector, as this one would do.

Allied with these factors was the unprecedented number of school leavers with interests in the humanities and social sciences, for whom no university places were available. General arts and sciences enrolments still do form the largest numbers of undergraduate students in most universities. Many of these young people were seeking broad based training in the social sciences, which would equip them for employment in a range of occupations in the public and private sectors that require conceptual, analytical, interpersonal and operational skills. They were also likely to seek later upgrading of their competence, qualifications and career options by continuing into degree programs in higher education. A preliminary needs analysis undertaken by the working party received these comments from industries in the region and other government bodies:

* A (TAFE) program which facilitates the entry of school leavers into the areas of Arts or Social Sciences fulfils a need in student demand terms alone

* the labour market demand for such a course may be most appropriate in a range of occupations covered by the new Clerks Award and in administrative positions generally

* the proposal attempts to take into account the need for formal education and training for the predominantly female workforce in the administrative, clerical and secretarial areas

* articulation into the course from existing TAFE Advanced certificates will provide enhanced career options (28)
Thus there was seen to be a need for a course which would provide both vocationally appropriate training and a defined pathway both into higher level courses and from lower level courses, for a cohort underserviced by existing program offerings.

The final important ingredient in this scenario was Swinburne's place in the outer eastern region, and its connections with other sectors there. In 1992 in Victoria there was a developing push by secondary colleges to enter the field of tertiary education by provision of a Year 13; the very high levels of both unmet demand for higher education places and unemployment being contributing factors. Several secondary colleges in the region, including Glenfern, a government-funded (state) school, and Billanook, a private one, had already begun work in innovative educational offerings at year 13 level. They were interested in the possibilities of combining forces with Swinburne, and it seemed sensible to make an alliance with a sector which had no difficulties with the concept of tertiary or work preparation in a generalist mode. Swinburne also saw the venture as more efficiently harnessing the resources of the region in order to offer higher education opportunities to its residents, and in developing the Senior College concept with the schools.

Minister Baldwin in announcing the pilot program early in 1993 described this pilot and another funded one- the initiative by Monash University to develop units through Open Learning- as innovative programs targetted primarily at Year 12 school leavers who were unable to obtain entry to tertiary courses. He said:

"Both pilot programs will involve only a modest cost to students and will also capitalise on the availability of space and teaching resources in the school system. They will increase the options available to school leavers, and encourage students to sample various offerings while testing their ability for tertiary study." (29)
**The Associate Degree Pilot.**

The pilot program was thus a collaborative effort between Swinburne and the schools sector, with SUT providing program development, accreditation, award, moderation and evaluation in conjunction with DEET. The schools provide tuition, administrative services, and student services. The program is currently conducted at the senior secondary college site(s). In the event, SUT TAFE assisted quite substantially in program development with writing of units, and are interested in providing the course at the Hawthorn campus in 1994. This proposal has not as yet been approved for funding within TAFE as an associate degree. There are difficulties in funding any credential in TAFE which has the word Degree in its title. There may be no impediment to its being offered as a fee-for-service course in the same way as a number of other locally accredited courses.

The articulation arrangements are that students who complete the associate degree will be eligible for entry into the arts degree with credit transfer of up to 1.5 years in the three year degree. This is a very pleasing result, and conveys much greater credit than any other TAFE course considered in the social sciences and humanities fields.

Although it is too early to evaluate the pilot, it appears to be both popular and successful, attracting slightly under 40 students in the first (mid-year) intake. Staff from the secondary school, Swinburne TAFE and the Arts Faculty at Swinburne are involved in the teaching.

**Validity of the Model.**

The fact that this course has attracted substantial funding as a national pilot indicates the seriousness of the government's intention of exploring new ways of providing post-
secondary education to the school-leaver cohort; and perhaps one which could make a useful contribution to balancing demand and supply.

The school/higher education connection is another example of integrated education and training delivery highlighted by Finn as an exemplary model, using Hervey Bay, Queensland, as an example. More recently government support has been given to the development of an integrated campus at Coff's Harbour, New South Wales, where senior secondary, TAFE and higher education programs will be offered on the single campus. The decision to retain the associate degree in the higher education sector, at least for the present, may be a comment on how little the TAFE sector is prepared to move away from its traditionally perceived role. To an extent, it also perhaps highlights the intentions of the higher education system to retain degrees or partial degrees as within their own purview.

The proposed National Qualifications Framework currently does not list associate degrees, although there are moves through the AVCC to alter this. This is a disappointing result for Swinburne, but there has been considerable interest in the program from some other universities, and Swinburne has facilitated the setting up of a similar program at Centralian College in Alice Springs, in association with Adelaide University. It may be that where there are specific regional needs, that this credential is appropriate, and it may thus have a small but significant niche in the overall offerings of universities in Australia.

Observations of the community colleges in the USA would seem to affirm the validity of the associate degree model there. The credential is widely understood and accepted in all parts of North America and much of Asia and the Pacific Rim countries, which have traditionally sent many of their students to North America to complete their tertiary education. Liberal arts or sciences associates degree programs there typically lead directly to years three and four of a baccalaureate degree in a university. The
associate degrees have a history of broad acceptance in the community and in business and industry for their development of a broad base of knowledge, and the skills of thinking critically and independently, problem solving, and communicating effectively.

(30)

TAFE in Australia has never developed the "transfer stream" that exists in community colleges in the United States, so articulation from TAFE to higher education will not be likely to be a direct one-for-one. Nor is the normal undergraduate degree in Australia four years, though a number of degree programs are moving that way with the addition of an honours year, and some specialist studies (for example in veterinary science) now are post-graduate studies, on the American model. It is hard to imagine Australia adopting the "two plus two" model here, yet, particularly in the arts and sciences, it could well serve a useful purpose. The emphasis in the vocational education and training (VET) sector on "industry-driven curriculum" still appears to equate that with very defined vocational outcomes. Whether that really best serves the purposes of developing multi-skilled and flexible workers who have strongly developed generic skills, remains to be seen.

2. THE ASSOCIATE DIPLOMA OF ARTS-DESIGN.

The Concept: External Environment.

In March 1987 the Commonwealth Tertiary Education Commission report "The Responsiveness of Tertiary Education to the Design Needs of Australian Industry" identified design as critical to the development of an Australian culture which must emerge if the nation is to redress its trade imbalance and compete successfully as an international manufacturing trader. Among its recommendations is one for 'effective credit transfer between and within education in all three sectors'.
In 1990 Outer Eastern College of TAFE (OECT) conducted a survey of local industry to which fifty-four respondents declared a need for various categories of employee with design training. In May 1993 a cross-industry conference Design Across the Training Curriculum, held at the World Trade Centre in Melbourne affirmed the need for design training through industry and commerce. In July 1993 Swinburne University of Technology began collaboration with OECT to develop a cross-sectoral course in design as part of its Pathways project.

**Institutional development.**

The notion of a higher education institution (even one with a TAFE component) developing curriculum for the TAFE system, did not initially receive a sympathetic response from the Victorian Office of Training and Further Education (OTFE) or the industry training board- Arts Training Victoria. The concerns were that the curriculum would be driven by a higher education perspective, and would not necessarily answer industry's needs. However, due to an active and productive collaboration with Outer Eastern College of TAFE, the setting up of a proper Industry Advisory Committee, the delivery of appropriate needs analysis instruments such as DACOM sessions with industry, and meetings with the Design Standing Committee of Arts Training Victoria, these concerns were adequately answered, and industry and OTFE support was received for the curriculum. (32)

**Course development.**

When the Design intersectoral working party had considered the current TAFE associate diplomas in relation to the degrees at SUT in Graphic Design and Industrial Design, no credit transfer had been found possible, except in a very minor way into Industrial Design: and that credit transfer was more likely to come from an engineering or science-based associate diploma than an art and design one. For a number of years,
the TAFE Advanced Certificate of Art and Design (a two year course) had provided successful applicants for the Graphic Design degree, and to a lesser extent to Industrial Design, but only at entry level.

The concept of the new associate diploma had arisen because of a number of factors combining at a fortuitous time. At this time the TAFE system had been in the process of re-examining the whole of its art and design provision. Re-writing of the Advanced Certificate of Art and Design would up-grade it to an associate diploma (in Visual Arts) but some of the design elements would not be picked up. Arts Training Victoria's industry training plan also flagged support for a more generic design course which had the potential to become the foundation for many, if not all, of the current related courses. (31) In the meantime, OTFE had indicated support for a proposal from RMIT TAFE, for development of a generic design course at the advanced certificate level, which it was hoped would become a part of TAFE courses in all areas where design is applied (e.g. manufacturing, building, etc). Ultimately, the development of the two courses has been dovetailed to a certain extent, so that there are common elements, and both are to be presented for accreditation at the same time.

Within higher education, SUT's two design degrees were currently undergoing reconsideration as a result of mergers with the former Deakin University School of Industrial Design on the Prahran campus and the subsequent re-formation of a separate School of Design. The opportunity existed to create a new TAFE curriculum which would have its own integrity and validity as a TAFE credential, yet possess substantial articulation with the design degrees.

The agreed objectives of the course were to:

* provide a generic training in design for delivery through the TAFE system
* ensure full articulation into the degree courses in graphic design or industrial design at Swinburne University of Technology
* provide a model of articulation from TAFE providers of design training to courses in higher education institutions
* provide a course with multiple exit points to train workers with design skills capable of entering various industries at Australian Standards Framework (ASF) levels 4-6.

The Course Advisory committee endorsed the draft competencies, and the flexible course structure, and the curriculum was developed following an additional process of consultation with design industry practitioners and lecturers from higher education. Articulation was designed to be directly into second year of either graphic design or industrial design degrees. This was a marked advance on all previous articulation arrangements in the art and design area in Victoria. The course Advisory Committee unanimously endorsed the curriculum and it proceeded to successfully achieve accreditation as a statewide course in December, 1993.

Other universities in Victoria with design courses have also expressed written support of the course in the accreditation document, and have expressed willingness to consider similar formal credit transfer arrangements. This is a very positive affirmation of the perceived usefulness of the credential both in its own right, and for articulation purposes. The fact that its curriculum is designed to articulate into both degrees means that there are a number of common elements, most especially in the first year of the course, which also goes quite some way in answering the proposed directions for generic design training as set down in the ATV Industry Training Plan 1993. A number of TAFE colleges have expressed interest in trialling the curriculum in 1994, and it appears likely that the course will supersede (with other new associate diplomas) the older Advanced Certificate in Art and Design.
This is the Pathways project which comes closest to the notion of integrated curriculum development. Block credit into second year of the degree programs was seen by the course developers as feasible, whereas a common first year for both degree and diploma students, though initially proposed, foundered, largely because of the lack at that time of sufficient common elements between the two degree course approaches to first year studies. However, a very close collaboration between higher education and TAFE personnel in developing the competencies at associate diploma level has ensured that the new curriculum is closely linked to appropriate outcomes in the degrees at similar levels. It has also assisted in the review of the higher education degree courses themselves.

3. SPORTS STUDIES.

Intersectoral links.

Another associate diploma initiative was the proposed Associate Diploma in Sports Studies, currently under active consideration by the Australian Council for Training Curriculum (ACTRAC) for national curriculum development funding. (* funded for $147,000 in 1994) This was an interesting tangential development, which began because of the possibilities of articulating into SUT degrees in applied science, for example in areas relating to sports technology and sports measurement; and into business, in areas like facility management, marketing, and supervision. Again, it was a response to government policy, particularly the Deveson Report, in seeking to develop more generalist two-year programs as a different form of access to degree-level studies; as well as a collaborative arrangement with another TAFE college— in this case Western Metropolitan College of TAFE (WMCOT) to develop a viable vocational credential.
The links this time were to be from entry level courses in TAFE, for example the TAFE traineeship in Sports Management, which WMCOT had developed as an Australian Vocational Certificate in 1992, and of which they and SUT TAFE were the piloting colleges in 1993. In addition, Victorian Certificate of Education (Year 12) sports studies at Hobson's Bay Secondary College, identified the need for links into some middle level courses for their students. Both secondary and TAFE providers indicated the need for further studies in sports-related areas at the middle-level, or more access to tertiary courses. Hobson's Bay has been involved in a Carmichael pilot (studies funded by the government to help implement the major recommendations of the Carmichael Report, particularly relating to redesign of school curriculum in order to encompass work-related competencies) with the Department of Schools Education to this end. Hobson's Bay has involved Swinburne TAFE and WMCOT on its advisory committee for development of the school curriculum in a way which would maximise credit transfer and articulation into further courses.

**A Feasibility Study.**

Swinburne funded a feasibility study into the desirability of developing an associate diploma, and found general support from the sports industry for the concept; including VicSport and the Australian Football League (AFL), who recognised that training was necessary in their industry, but that new jobs were not necessarily going to be found. Degrees in sports related studies take in very small numbers in Victoria, and around Australia, compared with the extremely high level of demand; and these courses are not likely to expand in provision in the near future. There was some possibility for expansion in the industry seen in the run-up to the Olympic Games in Sydney. It therefore seemed sensible to propose a a course which provided the widest possible spectrum of outcomes from a student's point of view. (34)
A multi-disciplinary course, with formal and agreed credit transfer into business, applied science and sports-related degrees, and likewise agreed credit from VCE studies and TAFE entry level courses, was endorsed by the feasibility study undertaken by Swinburne. The study also endorsed the concept of flexible delivery, preferably part-time, in recognition of the likely number of athletes and students who would be expected to find the course useful.

As with the design project, the collaborative work proved fruitful. There was interest and support from the newly established national advisory committee to ACTRAC, the National Recreation Industry Training Board in Canberra, and several meetings were undertaken with representatives from the Board. If the course is nationally funded, it will of course have national applicability, and again, Swinburne will have participated in providing some models of articulation for the system. This is another initiative where Swinburne has looked to a tri-sectoral linkage rather than simply a TAFE/higher education one, again expressing the move towards greater and more productive links between all sectors.

4. THE ENGINEERING PROJECT.

Engineering: The Concept.

The most challenging project has been the Engineering one, because it sought to create something approaching a 'seamless web' of curriculum and student progression from advanced certificate level to double degrees. In the early stages of the project, the engineering working party (as with all working parties under Pathways, an intersectoral group) considered the possibility of developing an associate degree in this area as well, since it could yield closer articulation, and be simpler to accredit and pilot. In its purest form, this was envisaged as being equivalent to the first two years of
The undergraduate degree, and would be taught by TAFE staff, thus enabling higher education to move some student load to the latter years and post-graduate study.

The External and Internal Environments.

However, a number of factors militated against such an easy solution, most particularly the requirements of the professional association - The Institution of Engineers, Australia - which made its requirements for higher education teaching in all years of the degree course plain in its re-accreditation visit of early 1993. As well, holders of the current TAPE course enjoy associate membership of the professional association, and it was by no means clear that this would be automatically extended to another two-year credential.

Another important factor was that the associate diploma was being developed at the national level in competency based terms during 1993, and a number of TAFE staff were involved in the curriculum work. National competencies were being seen to be relevant at all levels of the engineering curriculum, so the most productive connections were seen to be from existing curricula.

Shifting student load proved to be rather intractable also, given the current freeze on expansion of post-graduate places, and the necessity of keeping up the school leaver commencements according to agreed profile discussions with government. It was not a simple matter to move the places to TAFE, since engineering is not a growth area in middle level courses in TAFE, at least in this state. If they remained higher education students, the academic staff in the working party, and others reported to them, resisted strongly the notion that TAFE staff could provide the teaching, and this was a concern, as noted above, of the professional association also. In the end, a compromise has been negotiated, but one which retains some of the most essential
features of the ideal model, and one which remains dynamic and capable of further development.

**Needs Identified.**

In the first phase of the engineering project, needs were identified in a number of areas across both TAFE and higher education:

* Low numbers of students in Engineering traditionally moved from higher education to TAFE or from TAFE to higher education with credit transfer. In 1992, less than 15 students obtained credit transfer.

* First year engineering degree students consistently experienced a high failure rate, up to 30%, some of whom repeated part-time.

* Swinburne, like most other universities, had according to the Head of School, Civil Engineering and Building, and the Assistant Registrar, been admitting increasing numbers of students into engineering courses who lack one or more of the normal pre-requisites (usually mathematics). The alternate entry scheme effectively required these students to achieve more in the same time as other categories of entrant, and was experiencing some difficulties.

* There was a lack of defined pathways for those students who had completed an associate diploma and achieved recognition as a para professional, but who wished to progress to full membership of the profession through further study.

**The Model: Phase 1.**
At the end of Phase 1 of the project, credit transfer agreements for the current two year associate diploma in engineering were formalised by the faculty for Mechanical and Manufacturing Engineering, Electrical and Electronics Engineering, and Civil Engineering. The credit transfer agreements provided the equivalent of one years' credit, (slightly more for Civil) for a successfully completed associate diploma in an allied area. They also usually required bridging mathematics or other units to be completed in order to achieve the maximum credit. In effect, this translated to one year out of three and a half of academic work, and work experience is something else that may be negotiated in terms of Recognition of Prior Learning, so the credit was more generous in fact than it appeared. For example, it well exceeded the minimum recommended under the AVCC national Credit Transfer Pilot Scheme, in which Swinburne were participating.

The immediate result of the improved credit transfer arrangements was that numbers of TAFE articulating students in engineering rose in 1993 to 50, from 17 in 1992. Clearly the formalising of credit arrangements indicated a greater interest in obtaining advanced standing than was hitherto recognised.

The Model: Phase 2.

During 1993 the design, development and implementation of Phase 2 of the project was carried out. The program will look like this:

At entry, students will enrol as they do now, as higher education or TAFE students. However, the associate diploma students will be 'streamed' quite early, perhaps right at the beginning, into a 'pathways' stream, if they identify themselves as aspirants for degree studies, and will take the extension units prepared as part of their course. A summer semester at the end of both first and second year is fundamental to the design of the 'pathways' stream, and will enable associate diploma students to catch up with
subjects or units that they will need for successful completion of the degree. Close co-operation with tertiary selection officers is planned, so that students are carefully selected for the summer school and offered provisional places if they successfully complete it.

Commencing degree students likewise will be placed in the 'pathways' or alternate entry stream, and undergo a modified program which also includes a summer school. For some subjects, such as mathematics, it may be possible to timetable the offerings for both groups congruently, so that they participate together, both during the year and during the summer school. It is intended that these aspects will be taught jointly by TAFE and higher education staff. Some units will be available in flexible learning mode, and therefore may be undertaken by students from home. (35)

**Outcomes.**

As students progress, they will move through the system at a pace and a level which suits their skills, abilities, and application. Higher education students will receive closer monitoring and counselling, and will be given the option of moving to TAFE studies much earlier than has been usual; perhaps after semester one. Students may enter at either level, but exit with a qualification from the range of advanced certificate, to associate diploma, to diploma, to bachelor of technology, to bachelor of engineering. In theory, an associate diploma student who completes the pathways stream and one or two summer schools may exit with an engineering degree in the same time as a 'normal' entry student. In practice, it is not anticipated that many students will achieve that. Many more are likely to move to the B. Tech., and perhaps up-grade later. Equally importantly, entering students in the degree stream should find a number of alternatives if they find they are not succeeding. The intention is to offer a Swinburne engineering place, and the student then progresses at their own pace to their own
outcome. This is currently being negotiated through the university admissions processes.

Potentially there are a number of other positive outcomes to be derived from this model. As it moves into practice and degree students and academic staff become more familiar with the detail of the TAFE courses, there is an ideal opportunity to consider enriching the experience of the higher education degree by incorporating into it some of the more applied project work offered in TAFE, and using some of the advanced specialist technician expertise and equipment in the TAFE Division. To a minor degree this has already happened. In addition, studies are being undertaken at Swinburne of the reverse articulation of students from higher education engineering to TAFE qualifications, and better credit transfer outcomes will also be negotiated for this group.

Not surprisingly, this model, even though it fell short of the completely integrated model originally envisaged, was not easy to negotiate. Concepts such as shared teaching, shared classes, a summer school, were initially fairly heavily resisted by staff on the intersectoral working party, but they are now ready to pilot the program in 1994, and observe the results. Part of the reason for this is the extensive staff development which has gone into this concept in the Engineering Faculty. Several information sessions have been held with a large variety of staff, not only those involved on the intersectoral working group. The working group itself spent quite a considerable amount of time coming to an agreed position on goals and outcomes for the group, and this assisted in developing cohesion among them. In addition, an extensive advertising campaign and development of a striking colour brochure entitled Engineering Pathways was timed to co-incide with Open Day in 1993, and information promoting the concept spread widely through the university and its feeder schools, as well as TAFE colleges.
The summer school concept is one that has received support at the Vice-Chancellor's Committee, and there is a proposal currently before the Vice-Chancellor to implement the notion university wide. Within the engineering faculty, if the summer school concept is successful, it should assist such initiatives as the provision of a double degree (engineering and languages) a concept developed in 1993 by the Dean of Engineering.

The summer school idea was one that was endorsed in policy papers from at least Dawkins on, as an efficiency in the use of resources that institutions ought to consider, and universities have begun to look at three semesters in several cases. There is no doubt that freeing up timetables by innovations such as this assist in enabling greater credit transfer to be implemented and in creating greater flexibility of choice for students.

The new ground achieved by the Engineering project has thus been in the areas of structural and institutional change rather than new formal credentials. Nevertheless, there has been considerable emphasis on curriculum congruence, and some progress in attempts to measure congruence by outcomes rather than inputs. Although the "seamless web" has not yet been achieved, there are very useful results in the flexible delivery conversion units developed as part of the project, especially in Articulation Mathematics and Physics, and these will materially assist students in accessing degree courses with maximum credit transfer. The summer school will be open to other TAFE providers also, so the benefits of the articulation courses can be spread widely through the system.

These four models of curriculum development illustrate the diversity of approaches necessary in order to tease out what will be the best solution in a given field, and demonstrate more than anything, perhaps, that a single solution is not likely to be productive. They also do demonstrate what can be done with sensible amounts of
funding. Curriculum work, particularly dual-sector work, is time consuming and requires staff development and infra-structure support. Difficulties, tensions, and conflicting interests at individual, institutional and system level are likely when traditional structures or approaches are threatened, but the common projects should engender a strong sense of ownership in the finished product.

Having gone so far to implement government policy, it will be vital to build on initiatives such as these to consolidate what "Pathways" has begun.
CHAPTER 5: IMPLEMENTATION AND ASSESSMENT

As indicated in Chapter two, implementation of other aspects of the Swinburne Pathways Agreement apart from curriculum were also essential elements in the project.

1. Credit Transfer Agreements.

The working parties in business and applied science did not emerge with new credentials or a new structure. They concentrated on achieving the maximum credit transfer possible into the range of degrees offered from the TAFE courses provided at Swinburne. The business faculty had always taken in by far the largest numbers of TAFE articulating students, and possessed the most mature monitoring and evaluation systems of all the faculties. They were able to increase the credit available to 1.5 years in a three year degree in accounting and marketing. (36) A higher education subject in management skills was re-written in competency-based terms, and approved at the state-wide level for inclusion in TAFE associate diplomas to replace a TAFE unit. That assisted in achieving greater credit. This outcome should make SUT business degrees very competitive, and will assist TAFE diplomates to complete two credentials in a minimum time. It is expected that this will have especial attraction for international students.

Applied science work covered all seven degree courses on offer at SUT and the TAFE associate diplomas provided in the TAFE division, and achieved a minimum of one years credit, or for some courses approaching one and a half years, in all degrees.(37) An important innovation from this group was to develop an arrangement for the degree in computer science which would accept TAFE associate diplomas from any of business, science or engineering (provided there was adequate computing content) as a block credit into year two of the degree. This should, again, by its flexibility, attract
more useful credit transfer, and like the business faculty agreements, should make the credit transfer available at Swinburne widely available throughout the TAFE system.

2. The place of Flexible Learning.

The development of flexible learning materials and packages was integral to the curriculum development phase of the project. During the initial stages of course analysis, some modified course development occurred in most degree and diploma courses. The process also served to identify a number of situations in which minor discrepancies between curricula will continue to exist or where the demand for alternative, modified or conversion courses will not be great enough to regularly conduct these customised courses at times convenient to a significant number of students.

The introduction of a flexible learning approach began to alleviate this problem. This approach to education allows for the adoption of a range of learning strategies in a variety of learning environments, and takes place at a time, in a format, and at a level, which is most appropriate to the learner's needs. This approach was crucial to the eastern campus, which is piloting courses in multi-modal learning for its students, so it was an additional reason for development during the Pathways project, and one very consistent with SUT's strategic development plans.

The delivery of conversion units in flexible learning mode is initially expensive, but ultimately cost-effective, since it does not tie up the resources involved in traditional classroom based delivery. Applications can be repeated many times, and can also be offered to the system or sold commercially. This can potentially be of great benefit to other TAFE colleges wishing to take advantage of Swinburne's curriculum work in preparing their associate diploma students for maximum credit transfer.
Projects were undertaken within each of the five intersectoral working parties, and ranged from flexible print-based materials supported by modem access to computer applications software (articulation mathematics) to a video disc tutorial module (articulation chemistry) to a distance education bridging program (Japanese). In this way the benefits of the pathways work can be more efficiently and effectively accessed, but, as in so many other areas, it will be vital for the institution to support the initiatives taken in an on-going way. Flexible learning is not a cheap option.


All faculties developed systems for the qualitative monitoring and evaluation of their TAFE cohort, and the Planning and Information Services Unit has a system in place for longitudinal quantitative evaluation. The faculties have also been aware of the different learning and teaching strategies that may need to be employed with these groups of students. It will be one of the priorities in teaching and learning as an academic staff development exercise in 1994.

MEASUREMENTS OF SUCCESS OF THE PROJECT.

Firstly, in terms of the major planks laid out in the agreement: all the following measures are detailed in the July 1993 Final Report of the Pathways Project:

1. Target figures achieved

Improvements were noted in the 1993 figures and 1994 saw the target of 420 achieved. This represented a considerable improvement on earlier statistics, both of articulating students and of students gaining credit transfer. Whether targets can realistically be expanded from this increased base is problematic, given the other constraints on categories of entrants, and the Commonwealth government's re-
direction of expansion for post-secondary education. This is a source of some
dissatisfaction within TAFE quarters, particularly from colleges not attached to
universities (which is most of them), who wonder whether TAFE in general will be
able to reap many benefits from these pathways projects.

2. Better Credit Transfer

As indicated above, a greater proportion of students received credit transfer, and the
credit transfer itself was for a much higher proportion of the degree course. Those
granted more than 25% credit in the degree rose from 26 in 1992 to 102 in 1993. The
DEET enrolment tapes of 1992 showed Swinburne as one of the higher proportions
around Australian institutions, offering about 8% credit transfer. By 1993 Swinburne's
assessment was more in the vicinity of 14%. The vast majority of degree courses now
have credit transfer agreements in place with TAFE associate diplomas. The only
exceptions are particularly specialised degrees such as in aviation, for which there was
no TAFE associate diploma at Swinburne. Although civil engineering is not currently
in the TAFE Division profile, arrangements were completed with Box Hill College of
TAFE for that degree. Most have considerably more than the one year recommended
by the AVCC Credit Transfer pilot project, though not many were able to achieve the
target set in the Pathways agreement of three semesters, due to, in most cases, the
increasingly vocational specialisms undertaken in the second year of the associate
diploma, and the consequent diminution of theoretical and abstract components.

3. Evidence of an University Credit Transfer Policy.

A credit transfer policy was developed in conjunction with the Registrar, and passed
by both the Academic Board, Board of TAFE, and Council, to become university
policy. This policy was widely promulgated.
4. TAFE Quotas.

In the debates over student load planning, and agreements on target quotas for TAFE articulating students, both at senior and junior levels of administration in the university, it was evident that the achievement of a quota for TAFE, and guaranteed entry for TAFE as a category, was not easy to achieve given that the university was not offered additional places to accommodate TAFE articulating students, and was constrained by requirements to offer defined numbers of school leavers, for which there were fiscal costs if the numbers were not reached. During the life of the Pathways project there certainly was an incentive to reach the target number of 420, since the final payment of $400000 was dependent on the State government being convinced that the institution would deliver this quantum by 1994. (It did) However, there was no in-built incentive either at state or commonwealth level to retain this number or the higher credit transfer percentages captured by DEET. Institutions were advised that they were to work out their own proportions of commencing students within the categories defined, and that they should have sufficient flexibility to do that.

Some faculties, in addition, feared that TAFE articulating students would replace their other E-type students, such as mature-age students, and were not convinced that this was either equitable or suitable for their courses.

Recent research around Australia appears to confirm the conclusion that Swinburne's own Monitoring and Evaluation study reached; that is, that TAFE articulating students achieve as well as other categories of students.(38) One of the most recent DEET studies, at the University of Western Sydney, found that ex-TAFE students performed better than mature-age students, but slightly worse than Year 12 matriculants, and concluded that TAFE students were a valuable source of commencements, and should be sought after.(39)
This message had to be 'sold' to academics and senior management, many of whom were rather fearful that TAFE entrants, particularly if 'forced' upon them, might subvert standards because they were not good enough to get into higher education in the first place (assuming that no-one would have actually chosen a TAFE course as first choice). They were of the view initially that additional TAFE places would, or should be provided with extra load, not by altering the existing formulae. When it became evident that additional load was not forthcoming, the faculties did agree to target figures. A considerable amount of work was undertaken in staff development activities and simple dispersal of information to faculty planning personnel in order to appraise them of recent research; to better inform them of TAFE curricula; and to open up communication between the sectors.

Those areas which traditionally had a low intake from TAFE (for example applied science) were understandably more nervous about this procedure than, say, the business faculty, and there was concern that the additional credit now available would affect the general preparedness of TAFE students for theoretical and inquiry based work, rather than the vocationally specific tasks they were used to. The development of adequate bridging and conversion units initiated by the intersectoral working groups has gone some way to alleviating this perception.

Discussions on numbers highlighted the weaknesses of current data specifications (generated by the Commonwealth Department of Employment, Education and Training-DEET) and the university's own reliance on the Victorian Tertiary Admissions Committee (VTAC) forms for data collection. It became clear that it was difficult to accurately measure those students who were identified as having a TAFE background, or, more importantly, those who were selected on the basis of their TAFE background. This category could be checked against those who were awarded credit transfer for previous TAFE qualifications, but even so it was not a reliable match. This unreliability of statistics was a constant frustration, and was echoed by the
other Victorian University Pathways projects at the regular Pathways Co-ordinator's meetings. The matter has been taken up with DEET by the Office of Higher Education Co-ordination in the Department of Education in Victoria.

5. Transparent information

Considerable work has gone into publication and promotion of the credit transfer agreements, and the university's policies on credit transfer, both within and external to the university. Agreement has been reached within the university that the agreements will need to be up-dated on an annual basis, and that promotion and publicity will need to be on-going. For enrolment of students, arrangements have been made on the university management information system (MIS) so that credit transfer may be applied for and granted at the time of enrolment. All students are made well aware of the articulation agreements. Swinburne TAFE students and other students in the region are given information sessions at the time of the Victorian Tertiary Admissions Committee (VTAC) applications (September), and were invited to submit Expressions of Interest so that they may be easily identified by selection officers.

In addition two large seminars were held. One was for the internal Swinburne community at about half way through the project, in order to inform staff of the curriculum development initiatives, and promote discussion and the transfer of ideas. The other secured prominent external speakers on the general subject of pathways and articulation, and again promoted the concept of pathways to the audience. Both seminars were well attended. In addition, Swinburne organised and hosted a meeting with the three major professional associations: The Institute of Engineers, Australia; the Australian Society of Accountants, and the Australian Psychological Society, on behalf of the Pathways Co-ordinators of Victorian Universities. That meeting was a productive interchange, and again promoted the concept of pathways, suggesting possible changes to accreditation or recognition practices that may assist in the
process. This is an area which it will be vital to follow up after the cessation of the Pathways projects.


The study of combined curricula did not yield many examples of highly congruent curriculum, as has been indicated. Nevertheless, the curriculum studies did lead to a number of exciting new developments, including a new associate diploma for the TAFE system that is closely articulated with higher education; a completely new course under a new credential for the university: the associate degree, which enables much greater credit transfer into the generalist arts degree; and a new structure in engineering which begins to blur the boundaries between the sectors and offer an engineering education across the board. These developments will be enduring benefits to the whole system, and they will be able to contribute in a real way to the policy debate on the future of post-secondary education in this country.

Both the sports studies and the design curriculum work are significant in that they have been contributions to new curriculum for the TAFE sector, a result which is appropriate for Swinburne, given its dual charter, but unusual for projects such as these. Acceptance at the TAFE level has meant that the course had to be accepted as relevant and endorsed by industry. For significant advanced standing, the course had to show strong alignment with the degree courses. The design curriculum managed to achieve both these things. This course is an example of a two-year curriculum which is generalist enough to form the foundation for several different degrees, and flexible enough to provide specialist training for a variety of vocational outcomes.

The associate degree is a bold experiment, and one which is being emulated in several other sites interstate on the Swinburne model, as indicated earlier. It is the generalist two-year credential in practice; but with vocational outcomes as well. Now a DEET-
funded pilot, it should contribute considerably to considerations of the best future (as well as the best nomenclature) for such courses. In engineering, very positive foundations have been laid for a much more integrated provision of engineering education and training; one facilitated in this case by the conversion units in flexible delivery mode. This model's further development is limited now only by external constraints.

7. Two-way credit transfer.

This was achieved to a limited degree in the engineering project as indicated above; but not generally able to be pursued very thoroughly, partly because of lack of data on higher education entrants into TAFE courses. Processes are in place to now capture that data.

8. Staff development.

Creating in-service for staff at all levels was addressed in an on-going way throughout the project and some examples have been referred to, as indicated above. Also, faculty administration and selection officers were acknowledged as key figures, and special sessions were held with these people, so that their understanding of the targets and quotas was accurate, and their recording of statistical information improved, (including unmet demand, which is notoriously difficult to quantify).

In addition to the specific requirements of the Pathways agreement, there are other important ways of attempting to measure the success of the project. Broadly these may be summed up as changing the culture of the institution, and in mainstreaming the project into university procedures and practices.

Important factors in both these areas were seen to be the following:
1. Executive vision and leadership.

The Vice-Chancellor at Swinburne took a very active role in this project. Physically the office of the Co-ordinator was brought within the Chancellery, which served as an important symbol of its perceived importance. The Vice-Chancellor chaired meetings of the Swinburne Reference Group, a group set up to monitor the project and provide input from government and external stakeholders. He chaired meetings of the combined intersectoral working parties and other personnel involved in the project at several key times during the project, and led the seminars for staff and externals. He introduced the project to Council, and ensured that regular reports were supplied to Council. He established Pathways as a key Strategic Objective for the University in 1993 documentation.

In this way, the concept of Pathways was certainly championed at the senior level of the institution. The (then) Deans and other senior administrators were a little slower to endorse the concept, and in meetings attended by myself as co-ordinator, expressed concerns particularly with implementation issues such as student target quota numbers, industrial relations issues which might arise because of new concepts such as shared teaching across the sectors, and the standards of TAFE courses. However, it would be true to say that most senior administrators promoted the concept in their areas of responsibility.

2. Co-ordination of the project.

The Co-ordinator's role was crucial to the change management required in the project, since that person had the overview of all aspects of implementation; and was also required to be the focus for the project both internally and externally. The Co-ordinator was a member of all the intersectoral working parties, and became closely connected in a hands-on way with the new curriculum projects. The Co-ordinator also
needed to liaise with administrative staff at all levels, such as the Assistant Registrars in the (then) faculties, for matters associated with student selection and enrolment; the Registrar, for matters to do with developing credit transfer policy and procedures; with Human Resources, for matters to do with staff development. These latter elements were crucial in the mainstreaming of policies into institutional procedures.

It is hard to offer an objective judgment on how well these tasks were performed, and a longer time frame would need to operate before a measure of "culture change" assessed. All that can be stated here is that there was a great awareness of the need, and attempts to create such change within the confines of existing conditions.

If the TAFE articulating students perform as well as the national studies indicate they should, that should contribute perhaps best of all to a change in the internal perceptions of TAFE and achieve some of the long-term structural and attitudinal change that the policy documents argue for. Provided the target quotas are maintained, longitudinal studies will be able to usefully measure levels of credit granted against overall success, and that should also contribute to changes in perception of TAFE credentials. SUT's success in mainstreaming will be partly measured in this longer time-frame.

On the measures outlined above the Swinburne Pathways Project would appear to be a major success. However, if the underlying rationale for improving pathways is that they are seen to be one of the major engines for change and reform of the higher education system, there are limitations as to how far pathways can assist in such a reform before the efficacy of the sectoral divide as currently defined begins to be questioned. I will clarify further in the concluding chapter what I see as the consequences and limitations of this approach.
CHAPTER 5. CONCLUSIONS

In attempting to assess the significance of 'Pathways', both in terms of the Swinburne work and as a major plank in the philosophy of higher educational reform in Australia, one is continually drawn back to a consideration of the role and place of TAFE (or VET) as a sector in Australia.

It is significant that the curriculum of both schools and universities have been considerably challenged as a result of the Dawkins reforms and the Finn, Carmichael and Deveson Reports, but TAFE far less so. More typically, it has been re-inforced in its vocational role, and its separateness, special mission and industry focus emphasised. Yet at the same time it is being expected to take on a much bigger share of the post-secondary education and training responsibility, and provide a balance in growth to the universities, despite its unpopularity as a goal for school leavers. I see some inconsistencies here.

The identity of TAFE has always been problematic, at least since the reform achievements dating from the landmark Kangan Report (41) of the early seventies, and change has become endemic to the sector in its attempts to be properly responsive to government, industry, business and community imperatives.

The early years (the so-called Kangan era) witnessed an expansion in the access and further education side of TAFE, in addition to its strong role in entry-level vocational training, but from the early eighties, the vocational education and training aspects became the dominant focus of activity, as TAFE became more 'industry-driven', and development of post-Year 12 credentials in advanced certificates and associate diplomas reflected training needs as industry saw them. In the nineties TAFE has been conscious of its more complex role as a partner with business, industry, and even other educational sectors, as vocational training activity is deliberately offered outside the
college system to private providers, and as industry is expected to retain much of its specialised training itself.

This description of TAFE sounds simple and linear, but of course it is not, and there have always been passionate arguments and struggles within and external to TAFE about its true identity and place. There are many in TAFE (one might argue, the dominant culture) who strongly adhere to its vision as a provider of specific vocational "training" and who are more or less hostile to notions of "education"; responsive to industry rather than other educational sectors or other interpretations of vocational education. Yet there are others who see a more proper response to government policy, and a more successful vocational education and training, in embracing a less restrictive and narrow interpretation of curriculum.

In Victoria, funding for further education courses has been progressively replaced by funding for more vocationally specific courses over the last decade, though demand has remained high for general access and preparatory courses. General access courses such as literacy and numeracy have become 'vocationalised' within TAFE, so that workplace literacy is endorsed, but ordinary literacy less so. Staff, curriculum, structures and policy influence from further education within TAFE is weak, and not assisted by the movements over the last six years to structurally separate, then re-integrate, further education and the rest of vocational education and training. Any attempts to therefore elevate "general" education even within a key competency debate, or to try to integrate it more firmly into the strictly "vocational" mainstream provision, would require profound shifts all the way through the system.

Terry Moran, now chief executive of the Australian National Training Authority (ANTA), and immediate past General Manager of TAFE in Victoria, has no illusions about the role TAFE should play. Its brief is to respond to industry demands, and it should stay within this sector, and not attempt to blur the edges, as some institutions
are doing. Improved vocational training will contribute to the multi-skilling of the Australian workforce and will contribute to micro-economic reform. Labor market training, especially for the unemployed and/or retrenched, is another important aspect of TAFE's mission, and part of its contribution to government policy implementation. (42)

TAFE policy at state level gives endorsement to the notion of improved pathways to higher education, but only if TAFE's integrity and separateness is maintained. Improved pathways can assist in re-skilling the workforce, and that is where effort should be placed, not necessarily at Year 12 school leavers, for whom TAFE has never seen itself as a major market. (43)

While TAFE, it is argued, accepts the current rhetoric that narrowly specialised vocational training is now inappropriate for industry needs, it is hard to see how more general competencies are being incorporated in TAFE curriculum, despite the concerns of Finn. In fact, many people have observed that the push to competency based curriculum tends to lead in the opposite direction. (44) It is relatively easy to write curriculum and devise assessment for directly observable actions, outcomes and skills. It is much more difficult to describe and assess abstract or holistic skills such as problem-solving, analysis, enquiry and synthesis, which are the basis of 'general' education, and as a result those elements are not well-developed in TAFE curriculum documents, (45) even at the national level; nor are they spelled out in accreditation requirements.

This lack of a broadening of the vocational curriculum in TAFE or even the identification of generic skills in specialised vocational training means that attempts to provide structurally unified models across the sectors will be difficult, and improved pathways will not attract as much credit transfer between the sectors as they might be expected to. This was evident in the Swinburne Pathways project work.
A leading TAFE analyst, Ian Predl, and the Vice-Chancellor of Melbourne University, Professor David Penington, were both quoted in the "Australian" Higher Education Supplement on 15/9/93 as endorsing the concept of general education within TAFE, though from different perspectives. (46) Penington saw it as more sensible alternative to providing tertiary education for school leavers, uncertain of their career destinations, than the recently developed Year 13 programs in schools. TAFE does exist in the post-school sector, after all.

Predl saw a general education provision in TAFE as more accurately answering the needs of TAFE as it shapes up for the 21st Century: fewer colleges, more "institutes", more alliances with industry who will increasingly provide industry-specific training. He states that the TAFE system would be more effective if individual colleges offered general education courses up to Year 14, providing pathways through to employment and further education along the lines of the American community college concept. Recent visits of Australian TAFE Directors to community colleges in the US, and increasing numbers of professional exchange programs between the two systems, may be paving the way for new thinking in TAFE, though, along the US model. Certainly other states appear to be interested in new models of provision.

It is instructive to compare the Australian TAFE system with the community colleges in the USA, because there are some important similarities and differences. Community colleges there have a much longer and well-established history than TAFE colleges in this country. That history dates back to the early years of this century, but underwent its great expansion in the fifties and sixties. Community colleges see themselves as having three distinct parts to their mission: to provide access to further education for the general community, particularly disadvantaged groups; to provide general education as a foundation for further study in higher education; and to provide specialist middle level vocational and technical training. (47) There are distinct
similarities here with TAFE in Australia, though not all parts of that mission have been equally developed.

Although there are now influences in the US at federal funding and policy levels that point to the difficulty of being "all things to all people", just as there is in TAFE in Australia, the community college system in fact would appear to strongly endorse each part of its mission, and does not necessarily see potential constraints on one aspect leading to pressure on another. For example, access for disadvantaged groups to community colleges is protected by law in a number of states, and there would be no question of trying to deplete this provision in order to "beef up" vocational education and training, even though that is where federal policy is emphasising new directions.

Likewise the transfer stream in community colleges, which is often its oldest and most cherished part, does not appear to be threatened by a the newly identified needs for specialist vocational training. The importance of the transfer stream in community colleges in terms of access to higher education is that the general associate degree comprises the first two years of a (typically) four year undergraduate degree, and completes all the general education requirements of that degree. Hence it can provide much more of a 'seamless web' of education in that it will usually enter directly into third year, though not with any specialist pre-requisites. Two year associate degrees can also be completed in vocational specialisms, but they typically are able to attract only about one years' advanced standing, for the same reason that the vocational associate diplomas have had difficulty in negotiating liberal credit here: that is, it has been difficult to match like with unlike, and, in addition, vocational education is seen as being inappropriate as a background for tertiary studies.

In Australia, we seem to take the view that TAFE must be limited to its strictly vocational purpose, and even to see that purpose in a narrowly conceived way. We do not perceive it as legitimately enlarging its role. In my view this is a weakness in our view of TAFE, and will prevent it from expressing that convergence of vocational and
general education which is so basic to the Finn recommendations, and has been endorsed so heartily by the government.

In most of the credit transfer work in the Swinburne Pathways Project, it was disappointing that such an intense scrutiny of curriculum could not have emerged with higher levels of credit transfer. Most of the academics concurred that first year associate diploma work often yielded better credit transfer than the more vocationally specific, but less general and conceptual second year, and this situation will not improve unless TAFE two-year courses show more 'generalist' aspects. Of course, this was the thinking that led to the new model of the associate degree as developed at Swinburne, and the other, more highly articulated curriculum projects.

Clearly it would be impossible and undesirable to try to graft an educational system from one country onto another. Post-compulsory education in the US has a different tradition and history to ours; and the almost universal acceptance of an undergraduate degree being four years (minimum) with most of the first two years being spent on general liberal education is very different to ours, where, as Cherry Collins points out in a perceptive discussion of the current debate on general versus vocational education in Australia: "Our universities are vocational: one goes into medicine or engineering straight from school. There is no effort to ensure liberally educated graduates: we even have economists and lawyers with no sense of the great historical debate about human nature and society upon which their own professional practice has its foundations".(48)

It is possible to learn from each other, though an expansion of undergraduate degrees to four years in Australia across the board seems unlikely in the current situation, and therefore two years' credit transfer may not gain much ground. Universities will rightly be hesitant in acknowledging the majority of work in a degree from another sector which does not share the same purposes.
Policy advocates of improved pathways generally try to steer a careful path between advocating too much closeness between the sectors, which would affect the integrity of each sector's perceived 'mission'; and too little closeness which would not answer the inefficiencies and inequities of the current situation. 'Parallel pathways' are advocated. However, I believe this thinking leads to a major contradiction: the more that the two sectors develop the view that polarisation is appropriate, the less we will be able to achieve a convergence between the two. John Stevenson argued this case persuasively at the 1993 AUSTAFE conference, saying that the gap between general and vocational education seems to have widened considerably over the last five years, despite intentions to the contrary. (49)

When one considers the typical socio-economic make-up of TAFE colleges compared with universities, the potential class differences of such a polarisation are quite acute. Instead of creating a better educated and trained population over a wide range of occupations and professions, and creating useful stepping stones from one level of credential to another, or one degree of specialisation to another, we may well find ourselves with an increasingly distinct set of classes, less and less able to intersect their education and training needs.

Max Charlesworth encapsulates this concept in a recent article in "Unicorn", which considers the real nature of university education, and notes that the danger of technical and vocational education directed solely to satisfying the needs of industry and where the emphasis is on outcomes which are skills for employment, will be that it is 'little more than a device to reconcile the bulk of students to their predestined lot in an inequitable social and industrial structure, and remind them that they cannot change the social context, remove disadvantage, or make the unequal equal. Bringing technical and vocational education into some kind of relationship with university education may help the former to develop ....a critical ...perspective". (50)
This seems to me to be a crucial point, and a clear indication that the attempt to marry economic and equity arguments simply does not work. The status and position of TAFE will surely not be raised simply by making more places available in it, or by trying to 'sell' it to the general public by assuring people that there are perfectly respectable and useful jobs to be had at the end of it. Student choice is not necessarily about sensible outcomes, and why should the less able or socially and economically disadvantaged have to make the sensible choices, when the achieving middle classes don't have to? The upward socio-economic push demonstrated by student preferences for a university education, will not be answered by a publicity campaign for TAFE.

I believe what might increase its status in the eyes of the general public is the more generic associate degree or similar credentials, which have excellent credit transfer to higher education degrees as well as a useful general vocational outcome. About fifty percent of undergraduates in the US come from the transfer streams at community colleges, and the associate degree is used as a general qualification for employment as well. It may not have the status of a university course, but is still doing a lot better than this country at getting people from one sector to another in a cost-effective and equitable way.

In addition, it will be instructive to see whether the increases in TAFE articulating students achieved at Swinburne and in Victoria, and indeed in the country as a whole as a result of government policies, increases TAFE's status in the eyes of the public by making the worth of the associate diploma more known and accepted (as Dawkins and Finn argue); or whether it will simply re-inforce the notion of TAFE as a handmaiden to higher education. The management of pathways in individual institutions will be critical here; as will the promotion of two-way credit transfer. Recent research indicates that there may be much more movement "downwards" than "upwards" in the movement of students between sectors, as university students increasingly seek work-related competencies in their qualifications. (51)
More people will access TAFE courses in the future because the government will restrict further expansion in universities, and provide more growth in TAFE. But this by itself will not raise TAFE's status. It is no doubt true that not all of those who seek a university education can profit by it, and would indeed be better off being directed to another, probably middle-level course. But if the sectors remain so polarised, students' future chances must decrease if they opt for the TAFE alternative first. Improved pathways between the sectors will help the transition of people between TAFE and higher education, and the establishment of a TAFE articulating student category of entrant will assist, even at the level of consciousness-raising. But real transfer rates to universities will not be likely to increase unless there are additional places for this cohort, something Dawkins was quite well aware of in the Green and White papers, but government appears to be ignoring at the present time.

The achievements of Pathways may well be enduring ones, but once they start to go further and blur the edges between the sectors, the concept of separateness between the sectors is challenged, and there is a lot of investment: governmental, cultural, and institutional, in keeping those sectors separate. The global Finn targets of higher education reform, increased equity and efficiency, and a significant growth in participation in tertiary education by the year 2001, may not be achieved while the pathways do not challenge the main (educational) highway.
ENDNOTES


2. Finn, ibid, p.13,14.


See also: Ministers Dawkins, J. S., and Holding A.C., *Skills for Australia*, AGPS, Canberra, 1987, p.9., ".. the emphasis...must be on broad and transferable skills, and attitudes which equip the workforce to adapt to and influence change. This applies not only to 'generalist' courses in the humanities and social sciences, but also to more directly vocational disciplines such as engineering and commerce." and
Employment and Skills Formation Council, *Raising the Standard: Middle Level Skills in the Australian Workforce*, AGPS, Canberra, November, 1993, Executive Summary, ".. Steps should also be taken to develop middle-level formal award courses paying particular attention to the character of curriculum (generic and specific skills) and the course delivery elements (on and off-the-job training)."


15. Bennett, D, Report on AACC 73rd Annual Convention and visits to Community Colleges colleges on the west coast, USA and Canada, May, 1993, Swinburne University of Technology.


17. Dawkins, ibid, p.21.

18. Finn, ibid, p.51.


20. Finn, ibid, p.104.


33. Arts Training Victoria, ibid, Executive Summary.


43. State Training Board, *The Training Profile for Victoria, 1993*.


47. D. Bennett, Report on visits to community colleges, ibid, attachment 1.

See also, Parnell, D, The Neglected Majority, The Community College Press, Washington, 1985


49. Stevenson, J., ibid


APPENDICES

1. FINN DIAGRAM

2. ENGINEERING BROCHURE
POST COMPULSORY

EDUCATION AND TRAINING

FRAMEWORK

PATHWAYS

SCHOOL

STRUCTURED TRAINING ON AND/OR OFF JOB

WORK DEMONSTRATED COMPETENCE

INTEGRATION

NTB COMPETENCY LEVEL

AWARD

PART (1)
CERTIFICATE TRAINEESHIP

LEVEL 1

YEAR 10

YEAR 11

YEAR 12

ENTRY

CERTIFICATE TRAINEESHIP COMPLETE (3)

ADVANCED CERTIFICATE

ASSOCIATE DIPLOMA

LEVEL 2

LEVEL 3

LEVEL 4

LEVEL 5

LEVEL 6

LEVEL 7

LEVEL 8

C 14
C 13
C 12
C 11
C 10
C 9
C 8
C 7
C 6
C 5
C 4
C 3
C 2A
C 2B
C 1A
C 1B

Congratulations! You have entered the wonderful world of Engineering at Swinburne University of Technology!

Come with us on a journey into your future - engineering education that makes the most of your hard work and our extensive range of learning options.

The introduction of the Pathways program to Engineering at Swinburne means that our students have more options and outcomes to choose from than ever before.

Wherever you enter the Engineering system - via the Associate Diploma course, Degree course or Pathways - links are in place which allow you to connect with the other Engineering streams.

This means that all students can follow a path which is right for their interests and potential.

Take a look at the chart on the other side for a blueprint of where you can go.

Say you enter the Associate Diploma course and decide you want to move into the Bachelor of Engineering program. A combination of first year extension units and a summer semester at the end of first year will bring you into the Bachelor of Engineering stream at the start of second year.

Or maybe after the first summer semester you decide the Bachelor of Technology is right for you - that Pathway is open to you as well.

Degree students also have a range of Pathways to choose from.

First year students can access the first summer semester program if required to spread out their workload, or if they need to spend additional time in a particular subject area.

Depending on the outcome you choose, you can return to the second year of the Bachelor of Engineering degree, transfer to the Bachelor of Technology or move into the Associate Diploma stream.

Similar Pathways are available at the end of second year, through a second summer semester.

Summer semesters will run between November and March, and will offer a mixture of classroom and off-campus learning modules.

Extension units will be offered at various points for both Associate Diploma and Degree Pathways streams.

These units are designed for students lacking necessary prerequisites or who need additional work in particular areas of knowledge.

If you have any questions about Engineering Pathways at Swinburne, contact:

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The exciting innovations developed through Pathways are of course combined with the traditional excellence of Swinburne’s Engineering program.

Students in the Degree courses continue to participate in the Industry Based Learning program, a cooperative development between industry and the university which enables students to experience paid work in a relevant field as part of their course.

Bachelor of Engineering students take two semesters of IBL, spreading the course over nine semesters and Bachelor of Technology students are offered one six-month period of IBL, giving a total course length of seven semesters.

It is programs such as these that contribute to the outstanding employment rate of Swinburne students.

APESA statistics show an employment rate of more than twice the national average among our graduates.

And what else is in the pipeline at Swinburne? Plenty.

A double degree in Engineering and Languages (Japanese, Korean or Italian) is planned for 1995, and we are also looking at developing a Bachelor of Chemical and Food Engineering program.

It's a whole new world of Engineering at Swinburne University of Technology, and it's happening now.

Come and choose your Pathway to success.
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**Media**


Media Release, Ministry for Employment, Post-Secondary Education and Training, Victoria, 6th May, 1993