

Review of Australian Higher Education

Response from Swinburne University of Technology

Note: References are to pages / sections in Department of Education, Employment and Workplace Relations "Review of Australian Higher Education Discussion Paper" (June 2008)

1 The characteristics of Higher Education in modern Australia

Reference

Swinburne University of Technology supports the statement of the functions and characteristics of Higher Education presented in the Discussion paper. These provide a high level overview of the priorities of Australian universities, which while concise, is still inclusive enough to allow for institutional diversity and to support student choice.

Section 1.2

When the Review is considering further the requirements needed to develop and sustain capacity, a fuller discussion of current and future trends in workforce planning, together with the nature of academic work and its implications for reform of the sector would also be useful. Academic work differs to that undertaken in many other workplaces, particularly in its high level of autonomy. Management models from other industries may not always suit the academic environment. A more detailed consideration of the implications of changing student demographics (in particular, the decreasing proportion of students who enter Higher Education directly from Secondary Education) would also be appropriate.

Section 1.3

Within the discussion of the functions of Australian Higher Education (Section 1.2), an increased emphasis on the importance of creative thinking and innovation is also recommended, to the extent that this be separately identified as one of Higher Education's 'essential contributions'. This increased emphasis would sit well with the broader policy goal of establishing Australia as a "clever country" and would also accord with universities' broader 'social good' functions such as providing thought-leadership roles.

Page 7

2 Meeting labour market and industry needs

The discussion of demand management is a useful one and one which might merit still greater consideration. This greater consideration might, for example, be effected via:

Page 22

- A review of the efficacy of current funding levers, for example: differential funding rates and HECS levels for different disciplines; the effect of price as a signal of value (and its subsequent impact on students' choice of discipline); tied places; and, social inclusion strategies;
- Testing the extent to which evidence supports the implicit assumption that students as rational economic agents make rational discipline enrolment choices;
- Formalising whether universities' goals should include identifying and redressing areas of industry need; and,
- Quantifying the risks, costs and benefits of a 'free-market' policy for enrolment which would potentially allow institutions to over-specialise. What might be the consequences (for students, institutes and industry) of fewer, larger, highly specialised institutions such as a "University of Business Studies" for example?

Swinburne suggests that the discussion of demographic change within the Review should be expanded to include the impact on workforce recruitment and retention. An ageing workforce might lead to fewer qualified lecturers which would, in turn, lead to cost pressures (via wage impacts), quality discussions (via changing class sizes) and "scope of provision" issues (staff availability to deliver teaching).

Page 23

As the Panel investigates examples of good practice in the sector, Swinburne would like to propose the 'Swinburne Professional Learning Model' as an instructive case study of a successful institution-wide initiative designed to improve student outcomes.

Page 26

3 Opportunities to participate in Higher Education

Swinburne TAFE has a model in place for facilitating indigenous access to Higher Education which might serve as a useful case study in this area. This model is extremely successful and involves bringing students together from disperse locations for residential block mode teaching.

Page 29

Swinburne believes that participation of low socio-economic status (SES) cohorts remains little changed in the university system while overall access to Higher Education has increased¹. Possible reasons for this include: lower school achievement rates; lower educational aspirations; and, possibly, financial factors (for example the “capacity or willingness to pay university fees, the availability of income support while studying and the opportunity cost in loss of potential income while studying”²).

Factors which might ameliorate these potential hurdles therefore include a more advantageous regime for allowances and better funding for transition. Practically, this might be realised by:

- Supporting broad-based associate degrees which provide “starting points” for entry to degrees;
- Facilitating “transactional enrolment” for individual units which could then be amalgamated (perhaps via Open Universities Australia / OUA) into an entire degree; and,
- Targeted funding initiatives to allow TAFEs and universities to identify, promote and support these connections.

Swinburne therefore recommends improved and wider work on the Associate Degree model, and to this end, we include with this submission an earlier paper by Swinburne’s Vice Chancellor, Professor Ian Young³.

4 The student experience of Higher Education

There seems little evidence that larger class sizes detract from learning outcomes and CEQ indicators seem to have remained largely unchanged, even though class sizes have progressively increased. As a study published by the Association of Universities and Colleges of Canada (Gilber, 1995) suggests, “Small classes aren’t necessarily better. In fact, what goes on in the classroom matters more than the size of the class.”⁴ (although there may however be a risk to the market for

¹ Centre for the Study of Higher Education: *Participation and Equity: a review of the participation in Higher Education of people from low socioeconomic backgrounds and indigenous people* (2008), page 2.

² Ibid, page 3.

³ See Appendix 1.

⁴ Gilber, S. (1995). “Quality Education: Does Class Size Matter?”, Association of Universities and Colleges of Canada Research File, April 1995, Vol.1 No. 1,

international students if there is a *perception* of impact due to class size, irrespective of whether the impact is present or not).

However, impact on the student experience is a wider issue: for example, if students value individual consultations with teaching staff, then increased student/staff ratios would detract from the student experience. We would therefore be interested in any research within the Australian context which establishes students' priorities with respect to their experiences.

Page 35

Monitoring the quality of the student experience is a complex issue, and requires a wide range of indicators. Swinburne benchmarks against current, nationally available indicators such as the CEQ and GDS surveys; data on attrition, progression and demand (arguably one proxy for quality); and, other proxies for engagement such as the AUSSE survey. However these by themselves are insufficient, especially in the context of attempting to evaluate the impact of institutional initiatives to improve the student experience. Institutions also need to be guided by local, institutional measures such as surveys, focus groups, complaint rates, and longitudinal studies of graduate outcomes and perceptions. Although local measures make national comparisons harder, they do provide a more complete picture.

This discussion also affects staffing, and online enhancements to face-to-face delivery may help offset some impacts of increasing class sizes (and also provide a different, but highly valued experience, together with new opportunities for more students to access university education and lifelong learning – the recent growth in OUA enrolments, for example, is impressive).

Page 36

Looking at the (harder to monitor) issue of learning outcomes, both AUQA and the Australian Learning and Teaching Council (ALTC) have recently shown interest in setting graduate attainment standards. In our view, these external standards are likely to lead to even more restrictive regulatory environments which could hamper the development of innovative programs and new disciplines.

Pages 37-
38

Many of Swinburne's teaching programs are already accredited by professional associations which monitor standards in discipline-appropriate ways. Rather than impose a 'one size fits all' approach, we would therefore suggest a national approach to standards based on universities justifying the ways they set and monitor standards as part of the AUQA process.

http://www.aucc.ca/_pdf/english/publications/researchfile/1995-96/vol1n1_e.pdf (retrieved 22nd July 08)

⁵ Kelly, D.K. (2003). "Outcomes Approach to Higher Education Quality", http://www.tme2lrn.com/index_files/Outcomes%20Approach%20to%20Higher%20Education%20Quality.doc (Retrieved 22 July 08).

Swinburne believes this complex issue is also dependent on conventions and definitions – for example, Kelly (2003) lists 15 distinct learning outcome proxies being measured within the US and UK educational systems⁵.

With this complication in mind, it would be helpful if indicators from a wide range of measures of learning outcomes could be issued annually in a standard format 'Learning & Teaching Report' for each institution, similar to (or part of) the Institutional Assessment Framework, and also including a profile of the incoming student cohort.

With respect to the quality of learning outcomes and reference to national and international benchmarks, Swinburne feels that the following steps provide robust support:

- Robust processes overseen by the University Academic Board;
- Accreditation of many programs by external professional associations which themselves monitor such standards in discipline appropriate ways;
- National formal and informal benchmarking against public data from comparable institutions;
- Participation in processes such as AUQA; and,
- Formal and informal benchmarking activities at the international level (which need to take into account differing local contexts).

In our view, new external standards would lead to more restrictive regulatory environments that would in turn hamper the development of innovative programs and new disciplines, and thereby reduce on the competitiveness of the Australian universities.

5 Connecting with other education and training sectors

From the perspective of a dual sector institution, Swinburne suggests that the Panel consider Higher Education and VET in terms of having "connected, but different" missions. The Panel could however usefully expand upon this concept of "convergence yet difference" by exploring some issues this raises, for example:

- Whether there is benefit in VET and Higher Education missions converging (noting that it is not solely VET which has entered roles formerly delivered by Higher Education: many technical officers, for example, who might formerly have been qualified via certificates or

diplomas now have degree qualifications); and,

- What the role of TAFE might be with respect to research (identifying, for example, if government policy wishes TAFE institutes to undertake research).

The Panel could also usefully address some of the adverse consequences of regulations which attempt to either bridge or de-lineate differences. For example, the occasional shift of a Higher Education student into a TAFE program is discouraged as this is classified as attrition in Higher Education.

Page 42

Swinburne would like to see the removal of such structural disincentives. Reviewing the calculation of attrition rates would be particularly helpful.

Realising opportunities at the VET / Higher Education interface is frequently challenged by factors which inhibit movement between the sectors. At the most basic level, movement in either direction is confronted by differing educational frameworks. In particular, the outcomes focussed, competency-based environment of VET presents challenges for determining credit in Higher Education curriculum-based frameworks.

Page 42

The use of Training Packages and the competency-based environment of the VET sector presents a major challenge for articulation pathways into Higher Education. This difficulty is compounded by an increasing VET shift away from time-served notions of completing an award. Given the increased emphasis on articulation between the sectors, the Panel would do well to acknowledge these difficulties and look to addressing them.

Both sectors focus on developing transferable employability (generic) skills which is consistent with the lifelong learning essential to knowledge economies. However, there is no system which currently formally recognises these skills.

Intuitively dual sector universities offer excellent opportunities to maximise the benefits of interfaces between the VET and Higher Education sectors – however, even where these benefits exist, a number regulatory and financial factors still need to be addressed. Examples of these include:

Page 43

- **Quality Frameworks.** Maintaining dual systems is not only a cost to dual sector institutions, but is also particularly unhelpful in for collegiality and parity of esteem. Swinburne feels that a single tertiary sector should be regulated by a single quality system; and,
- **Capital funding.** Different State and Commonwealth approaches to capital funding make it difficult to come to the relationship as equal partners, but more particularly, make it difficult to effectively plan

infrastructure development and management.

Further, the Panel could also consider whether education should be centrally planned or purely demand driven. The VET sector is currently expected to implement Commonwealth and State government economic, social justice and education policies which would suggest that planning, rather than demand, would need to be the principal driving force.

Page 43

Swinburne also suggests that a single governance structure for the VET and Higher Education would facilitate pathways between the two. Swinburne is in a good position to provide best practice examples here since Swinburne Higher Education has the highest level of commencing student intake from the VET sector in Australia (around 26%)⁶. In addition, the progression rate for students articulating from VET is comparable to that of students entering degree programs after year 12⁷, a result not seen at other institutions. Moreover, the attrition rate for these students is lower than that of the equivalent students at other institutions⁸. This may be explained by: better defined pathways; effective credit transfer arrangements; the learning and teaching excellence of SUT; and, student familiarity with the campus.

Page 43-44

This discussion of pathways and cross-overs between the Higher Education and TAFE sectors is further drawn out via our Vice Chancellor, Professor Ian Young's earlier paper on this subject (included in Appendix 1).

Section 3.4

6 Higher Education's role in the national innovation system

Swinburne recommends that the Panel provides commentary on a wide range of trends affecting innovation and research. The costs and benefits, both financial and in terms of scholarship, of a number of developments would benefit from review and Swinburne therefore recommends a sector-wide analysis in this field which would include, for example, a consideration of specific factors such as:

Section 3.5

- The costs and benefits associated with the existing trend away from pure and into applied research;
- The question of whether research is more effectively funded via by measuring outcomes or via providing block grants (where universities

⁶ Swinburne University (2008), "Cycle 2 AUQA audit portfolio", p.46.

⁷ Ibid, p.48.

⁸ Ibid, p.49.

have greater freedom to choose their own research topics);

- Whether funding should be institutional or collaborative (i.e. via block grants or mechanisms such as Linkage and Cooperative Research Centres / CRCs)
- Whether research funding can continue on a partial-funding only model (unless research is fully funded, there is a structural disincentive to undertaking this activity in that increased activity necessarily increases the deficit which requires top-up funding via the institute); and,
- What the desirable mix might be between government and non-government funding of research in universities.

In terms of responses to the above (and other) developments, Swinburne welcomes the opportunity to propose here a number of approaches that may increase and advantage the delivery of research in Australia. These recommendations include:

- Increasing the level of government funding of research to meet the OECD level;
- Shifting from a model of partial-funding of research to full-funding of research;
- Facilitating and encouraging better links between universities and venture capital;
- Improving the tax treatment of research (and the tax treatment for companies which locate in Australia to undertake research); and,
- Providing a dedicated program for funding university research initiatives.

Swinburne would also like to emphasise the pedagogical necessity of maintaining a teaching-research nexus in each institute. Swinburne therefore firmly believes requires research needs to be undertaken in all universities. The 'research concentration' model risks removing this benefit by only funding certain universities for research.

Page 45

Swinburne would therefore advocate that neither "teaching only universities", nor their implicit corollary "research only universities", be pursued in Australia.

Finally, Swinburne particularly recommends that the adverse impacts of some measurement methodologies be remediated. For example, metrics such as staff PhD research activity disadvantage universities who wish to recruit either staff with significant alternative experience (for example, industry experience or professional qualifications such as Certified Practising Accountant / CPA and Chartered Accountant / CA). The Panel

Page 49

could propose modifying measurement metrics to allow for the valuable experience gained by non-PhD qualified staff to be leveraged by universities for both teaching and research.

7 Australia's Higher Education sector in the international arena

The internationalisation of Australia's education system generally, and Higher Education in particular, has contributed significantly to Australia's global footprint. This will intensify as the number of international alumni and the amount of international engagement (through involvement in transnational education and participation in global research communities) increases.

Page 50

While the issue of "unintended consequences" is raised in the paper, international education has also delivered "unrecognised benefits" which could, for example, be drawn out via the following questions:

Page 51

- Australian students benefit from studying in one of the most internationalised student bodies globally – but how well have Australian institutions developed programs which unlock the potential of this experience for domestic students?
- To remain relevant and competitive, institutions have had to internationalise curricula, and provide international experiences for academic and professional staff. The internationalisation of Australia's education system has, implicitly, 'internationalised' university communities, teaching and research.
- The transnational activities of institutions have led to components of the Australian education system being embedded (or scaffolded) in the education systems of trading partners. Has Australia truly realised the value and impact of these developments?

At the same time, visa regulations impact Australia's ability to compete globally for international students and limit Higher Education providers' ability to give international students a work-based training experience. The international competitiveness of Australia's education system would therefore be enhanced by providing for different types of work-based training under student visas.

While the paper recognises that all Australian universities (as well as those in our region) face a shortfall of talented academic staff, Swinburne would also suggest that the Federal government assist Australian universities recruit and retain high quality academic staff, perhaps by providing incentives for international PhD students to stay on

in the country and work in academic roles.

Further, while the nature of international engagement is changing as institutions explore new opportunities for collaboration (in teaching, research and via approaches such as the Bologna process and the Brisbane communiqué), Swinburne would ask if Australian regulations, particularly (but not only) the AQF, are keeping pace with these new models of collaboration across national borders?

Page 52-
53

Student mobility is one of the key strategies adopted by Australian universities to internationalise the student experience. Swinburne has been very successful in this regard and has recorded one of the highest levels of participation in student mobility programs as measured by the Australian Universities International Directors' Forum benchmark. The provision of financial support for students to participate in an international experience is a key driver in increasing mobility rates, as is the range, length and type of programs available to students. Extending the accessibility of OS-HELP would be an effective driver in increasing student participation in mobility programs. The take-up rate of OS-HELP at Swinburne has been good and Swinburne has ambitious student mobility goals, but the provision of government or institutional support is critical to increasing participation. The length and style of programs available must continue to change in order to permit new cohorts of students to participate in mobility programs. Extending the availability of OS-HELP to students participating in study tour programs would make these mobility programs more accessible.

Good examples of encouraging local students to undertake study in other countries include Swinburne having:

- One of the highest levels of participation in student mobility programs in the country, as measured by annual Australian Universities International Directors' Forum benchmarking; and,
- The third highest rate of participation in student mobility programs in 2004, 2005, 2006 (2007 data is reported in 2008).

Swinburne has achieved these results by building on its network of international partnerships, embedding optional international experiences within programs, and developing opportunities for Australian students to study, for credit, at its campus in Malaysia. Specific steps within this process include:

Page 54

- Developing the 'Electives Plus at Sarawak' program, available to students in the winter term. This study tour provides students with the opportunity to take one or two units of study over a 3-6 week period at Swinburne's campus in Sarawak, Malaysia; and,
- Developing the Global Leadership Program which is an innovative partnership between Swinburne and Northeastern University. This program allows study for two years in Australia towards a double

masters program (one awarded by Swinburne and one by Northeastern University). Academic staff from Northeastern travel to Melbourne to teach their component and the program includes an optional study tour in which students undertake 2 units over a 4 week study period in Boston. This program is providing opportunities for postgraduate students, traditionally under-represented in mobility programs, to have an international student experience.

8 Higher Education's contribution to economic, social and cultural capital

Swinburne would define knowledge transfer and community engagement in an Australian context as “providing direct contributions to society through staff and current students engaging with society and effecting change”. This contrasts with teaching’s *indirect* contribution through the supply of graduates, and research’s indirect contribution through the take-up of research results and the subsequent employment of research staff and students. Prosperity growth through human capital development is more important than, for example, commercialisation of university research, a view which is supported by research in *Melbourne – Australia’s knowledge capital* (Howard Partners, 2007) which identifies that only 0.4% of Victorian universities’ 2005 revenue was derived from royalties, trademarks and licenses (p.20).

Section 3.7

Swinburne agrees that knowledge transfer and community engagement are legitimate and appropriate roles for contemporary Higher Education institutions. The reasons for this include engagement tapping into the under-utilised talent at universities, particularly students before they become graduate employees. This latter aspect could be demonstrated by measuring the current impact of universities in their communities.

Page 55

Given these considerations, Swinburne suggests that this additional role for Higher Education could blend with its traditional roles via:

- Students: arranging engagement to be part of their education, or allowing it to be undertaken voluntarily as part of their broadening experience; and,
- Staff: viewing engagement as just another form of consultancy, which has long been accepted as part of university life.

The main constraints to the above are provided by workload issues, with funding of the above being possible via a simple model whereby universities are allocated pro rata amounts in years one and two, with their spending being reviewed after year one and the funding adjusted for year three accordingly, and so on. This would allow a wide range of

Page 56

engagement activities to be run according to each university's specialities, with future funding being clearly dependent on successful and productive outcomes.

9 Resourcing the system

The unintended consequences for the Higher Education sector of current funding arrangements include, from Swinburne's perspective, the issues of increasing student-staff ratios, and, casualisation of the workforce. Swinburne believes these two issues are the direct consequence of restrictions placed on institutes on volume (number of students who may be enrolled) and price (program fees which may be charged).

Page 62

Swinburne therefore believes that the current restrictions on volume and price should be relaxed – with the caveat, however, that relaxation of volume restrictions should be measured and supervised to avoid the previously mentioned risk of encouraging the dominance of large, limited offer universities (cf Section 2 of this response which discusses the possibility of a proliferation of large "University of Business Studies" type institutions to the detriment of higher cost disciplines).

Volume restrictions should therefore be undertaken hand-in-hand with policies that ensure that larger institutions cannot "crowd out" smaller providers by taking advantage of more favourable economies of scale).

Page 63

The consequences of such an outcome would be reduced choice for students and employers and fewer (but larger) providers with less competition and therefore also diversity.

Further, the average level of funding for Australia could be subject to an international benchmark review to ensure that the average OECD level of funding is also provided in Australia, with annual increases being indexed in the years between the benchmark studies of OECD base levels of funding.

*Page 64-
65*

10 Governance and regulation

The regulatory environment has also made it much more difficult to manage universities. The HESA Act has dramatically hampered the accreditation of new degrees and arguably also led to a reduction in the

*Page 67-
69*

quality systems universities have in place because the increased time requirement for regulatory approval has correspondingly reduced the time available for academic input.

The tougher regulatory environment may therefore have led to a dual deterioration, firstly via reduced time allowable for universities' own quality processes, systems and innovation, and secondly, via increased expense associated with new reporting requirements.

Swinburne therefore feels that any initiatives which successfully reduced the time and expense costs of program approval would be highly desirable.

The Discussion Paper is largely silent on an important source of tension for university governance which arises from changes in the broader economy, society and polity. Globalisation, internationalisation and the shift towards more contestable sources of funding have significantly changed Higher Education over the last 20 years and as a result, corporate and market-based systems have emerged alongside the collegial decision making systems that were historically at the centre of university governance. These two systems do not sit neatly together and periodically create significant tension.

Page 74

This shift toward more corporate forms of governance also brings tensions between Councils and the University Executive. Unseemly public disputes or tensions between Vice Chancellors and Chancellors have occurred at several Australian universities in recent years. As universities move toward smaller Councils that operate more like traditional company Boards, these tensions can be expected to increase. Perhaps there is a case for better training for university Councillors and Chancellors, so that they are better aware of the unique nature of work in universities derived in particular by the historical significance of collegial systems of decision making.

Similarly the Discussion Paper says little about the distinction between governance and management, and the huge transformations that have taken place to the latter. The sector is seeing an increasing trend towards professional managers who need to be well trained in the core management disciplines. Deans, for example, must be skilled in human resources, marketing and accounting in order to do their jobs effectively. This may imply a new career path for academics where those with management skills will be able to pursue this option as opposed to a path focused on teaching and research. Perhaps there is a need for better systems of education and training for this professional managerial group.

Section 3.7

The situation is similar for general staff in universities. The rapid growth of Higher Education over the last 20 years has seen the emergence of a large administrative workforce within universities which has an increasingly clear and rewarding career path. University administrators

are often required to have higher qualifications as well as different work aptitudes (including familiarity with more client-focused systems). Again, the emergence of (and need for) better systems of education and training for this professional managerial group is essential.

The Discussion Paper also says little about the difficulties within universities of operating within more accountable, managerial government funding and regulatory environments while at the same time having as a core part of their governance systems collegial (and highly autonomous) forms of decision making. Where does collegiality end and individual managerial responsibility begin?

Section 3.7

The consequences of these environments are often seen in the rising administrative burden facing universities from more extensive measurement and accountability systems. More and more is being measured, thus generating considerable costs, particularly for academics who increasingly grumble about this administrative burden and its impact on workloads. Initiatives which successfully reduce this burden would be welcome.

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List of abbreviations

ACER	Australian Council for Educational Research
ALTC	Australian Learning and Teaching Council
AQF	Australian Quality Framework
AUQA	Australian Universities Quality Agency
AUSSE	Australasian Survey of Student Engagement
CA	Chartered Accountant
CEQ	Course Evaluation Questionnaire
CPA	Certified Practicing Accountant
DEEWR	Department of Education, Employment and Workplace Relations
ENTER	Equivalent National Tertiary Entrance Rank
GCA	Graduate Careers Australia
GDS	Graduate Destination Survey
HE	Higher Education
HECS	Higher Education Contribution Scheme
HESA	Higher Education Support Act
LTPF	Learning and Teaching Performance Fund
MODL	Migration Occupations in Demand List
OECD	Organisation for Economic Co-operation and Development
OS-HELP	Overseas Higher Education Loan Programme
OUA	Open Universities Australia
SES	Socio-Economic Status
SUT	Swinburne University of Technology
TAFE	Technical And Further Education
TER	Tertiary Entrance Rank
VET	Vocational Education and Training

Appendix 1: Building Better Pathways to Higher Education

Presentation given by the Vice-Chancellor of Swinburne University, Professor Ian Young, to the Australian Financial Review Higher Education Summit, Melbourne 3-4 April 2007.

Building Better Pathways to Higher Education

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1. Introduction

Australia, like many other countries around the world, needs to seriously consider how its tertiary (Higher Education and Vocational Education) system will effectively meet changing societal needs. As modern nations progressively become knowledge economies, the proportion of our population which progresses from secondary school to tertiary education will increase. Our universities and TAFE Institutes have, however, evolved from systems where only a small proportion of the population progressed to tertiary education. It is questionable whether simply scaling-up the existing structures is the logical way to meet such an expanded demand.

2. The Australian Tertiary Education System

Before looking at possible alternatives to the present system it is opportune to reflect on the present tertiary education system in Australia. Broadly speaking, the present system consists of Higher Education (universities) and Vocational Education (TAFE Institutes). The differences between the two are often characterised in terms of the qualifications they deliver (eg. Higher Education – Bachelor, Masters degrees etc., TAFE – Certificates, Diplomas etc.). This distinction is, however, superficial and increasingly blurred. For instance, some universities now offer diplomas and some TAFE Institutes degrees. Rather, it is more instructive to look at the policy drivers informing the two sectors and the educational goals of each.

In the case of Higher Education, the critical policy drivers are education and innovation. All universities in Australia argue the critically important place of research in their institutions as both a driver of innovation and an informer of the educational philosophy. A key attribute of a degree graduate should be the ability to independently research a new topic and to critically evaluate material. What better way to develop these attributes than being taught by an active researcher?

In the case of TAFE, the policy drivers are again education but with the addition of industry and social policy. The TAFE education is heavily influenced by the immediate needs of industry and the requirement to develop workers with the specific skills needed by employers. This process is put into action by the many training packages which exist within the TAFE/VET system. The social policy element of TAFE is also critical in meeting many requirements around remedial education and access to education. The TAFE system is built around open access to education which contrasts with the competitive system of university entry.

The systems are fundamentally different and should not be considered in a hierarchical manner. As such, the blurring of mission (universities offering diplomas and TAFEs offering degrees) devalues the important, but distinct, roles of each sector.

Understanding of these distinctions is important in the concepts outlined below.

Progressively, problems in the present structures are becoming obvious. In the short term, these problems are manifested in terms of inadequate funding of tertiary education, and Higher Education in particular. As the system has expanded rapidly, government, representing the taxpayer, has not been prepared to fund this

expansion. As such, greater burden has fallen on students through loans (HECS) and full fees. Although there is still no evidence that students are opting out of Higher Education in significant numbers, Australia has reached a point where student contributions are high by international standards.

The challenges facing Australian Higher Education are not unique. Other countries have also struggled to cope with the massive expansion of Higher Education. Britain is a clear example and, in fact, has looked to Australia for ideas. A more striking example is Germany, where the once generously state-funded system is now staggering under swelling numbers of students and under-funding. One of the aims of the much-discussed Bologna process is to get students through the Higher Education system in reasonable time, rather than the 5 or 6 years typical of the European system.

Australia's challenges are not significantly different. Our universities are on a funding treadmill. Institutions have regularly competed for newly funded Commonwealth places whilst at the same time complaining that the funding rate per student is inadequate. Put simply, the universities are hoping that they can extract a small margin from each student to enhance the net income from provision.

The negatives associated with such unsustainable growth are significant. Quality is obviously challenged and ultimately the ability to meet the expanding education and training needs of the nation will be impacted. Had it not been for the spectacularly successful full-fee paying international student market, Australian Higher Education would be in a diabolical position.

The basic model of higher education delivery in Australia has not fundamentally changed since its establishment. A system designed for an elite few in society is now being applied to a mass market. The result is an expensive and unsustainable system which is not ideally suited to the educational needs of many students. Institutions have commenced the process of investigating alternative models for Higher Education. The "Melbourne Model" has received much publicity. Although this model may have educational advantages, in fact, it is an even more elite system than the one we have at present, increasing the average educational period from 3 to 5 years. The resulting 70% increase in the cost of education hardly represents a solution to the present situation. Other models have focussed on greater vocational and industry based skills (eg. Swinburne University of Technology, Victoria University). These approaches are aimed at making education more relevant, engaging students more and enhancing employability. All are laudable educational goals, but again, if anything they represent a move to further increase the average costs.

This paper reviews the present situation and develops an argument based on both educational and economic grounds that Australia should move to a system similar to that in the United States, where potentially very capable, but less academically prepared students study Associate Degree programs within a TAFE equivalent, before articulating to university. Such a system should enhance the success rates of these students, thus providing educational advantages. In addition, the reduced average cost of delivery will result in significant savings which could be used to support a system of smaller but better funded universities. Ultimately it will provide for a more sustainable system, capable of educating a broad cross-section of the community and meeting Australia's growing tertiary education needs.

3. The Changing Australian Tertiary Education System

Modern societies increasingly require large numbers of well educated and highly skilled employees. As such, there is an increasing demand for a higher percentage of our population to obtain tertiary qualifications [both higher education (university) and vocational education (VET/TAFE)]. This trend is clearly seen, by examining the percentage of 20 year olds engaged in tertiary education, as shown in Figure 1.

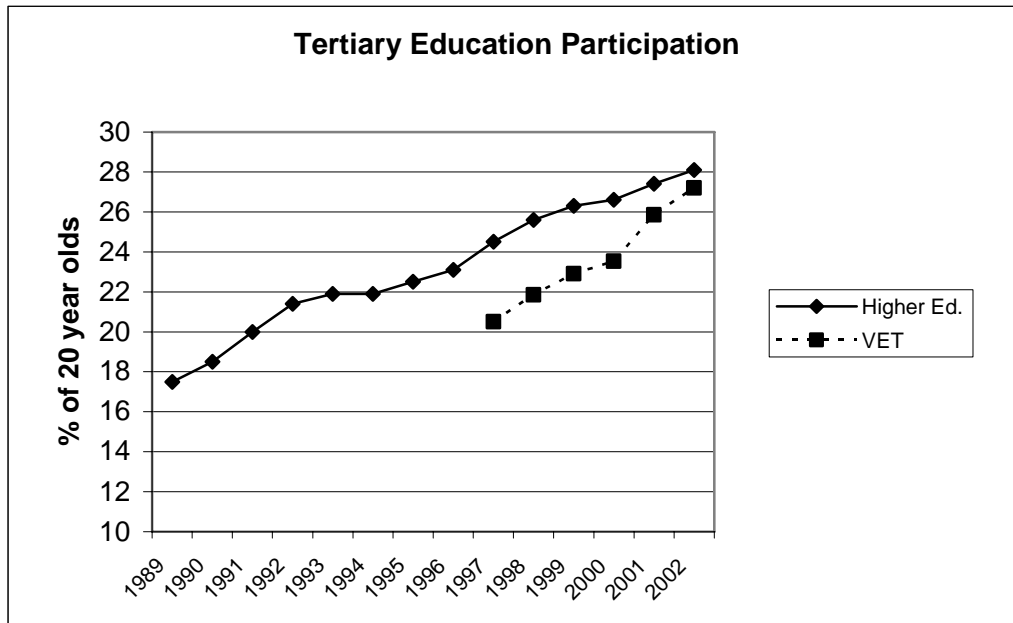


Figure 1: Percentage of 20 year olds enrolled in either Higher Education or VET. [Source: DEST Higher Education and VET participation rates].

Over a period of approximately 10 years, the percentage of school-leavers (approximated by 20 year-olds in Figure 1) entering Higher Education has increased by 10% (from 17% to 28%). Today, more than 50% of school leavers enter tertiary education (university or TAFE). The challenges for institutions, and government, to fund such an expansion are obvious. The rapid increase shown in Figure 1 shows no signs of slowing.

In addition, Australia, like most Western countries has an ageing population. This is clearly seen in Figure 2, which shows OECD predictions of population age distribution for Australia in 2015, compared to 2005. The number of 15-19 year olds will decline by 4% between 2005 and 2015. As a result, an even greater percentage of school leavers will need to progress to tertiary education in order to meet industry needs for highly educated workers. Hence, it can be expected that the percentage of school leavers seeking to enter tertiary education will continue to increase and that a larger percentage will be less well prepared for such education. It naturally follows that as the percentage of school-leaver participants increases, the system become less academically elite and must be able to cope with a much wider range of academic preparation.

A change in nature of the academic skills of commencing university students is already apparent in the data. Figure 3 shows the distribution of Tertiary Entry Ranks (TER or ENTER in Victoria) for Victoria. It is reasonable to assume that similar trends exist in other states. As the percentage of school leavers entering university increases, the TER distribution flattens. As a very high percentage of the most highly

achieving students already attend university, the expansion is largely supported by less well prepared students with lower TER.

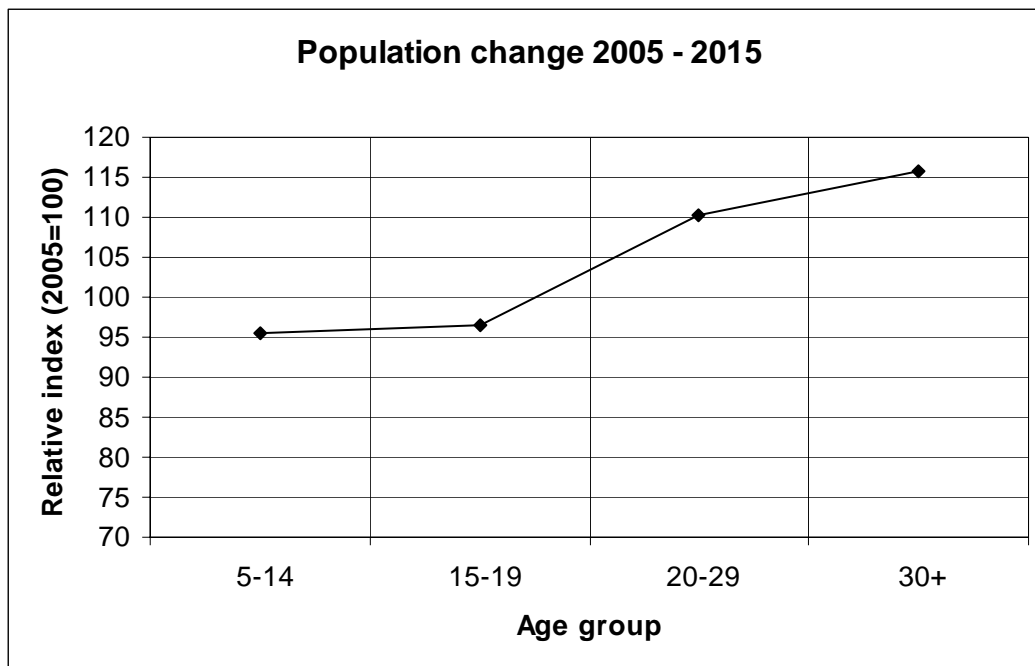


Figure 2: Demographic changes in the Australian population. The predicted age distribution of the Australian population in 2015 is shown compared to 2005. A value of 100 corresponds to no change between 2005 and 2015. [Source: OECD Education at a Glance 2006, Table A11.1].

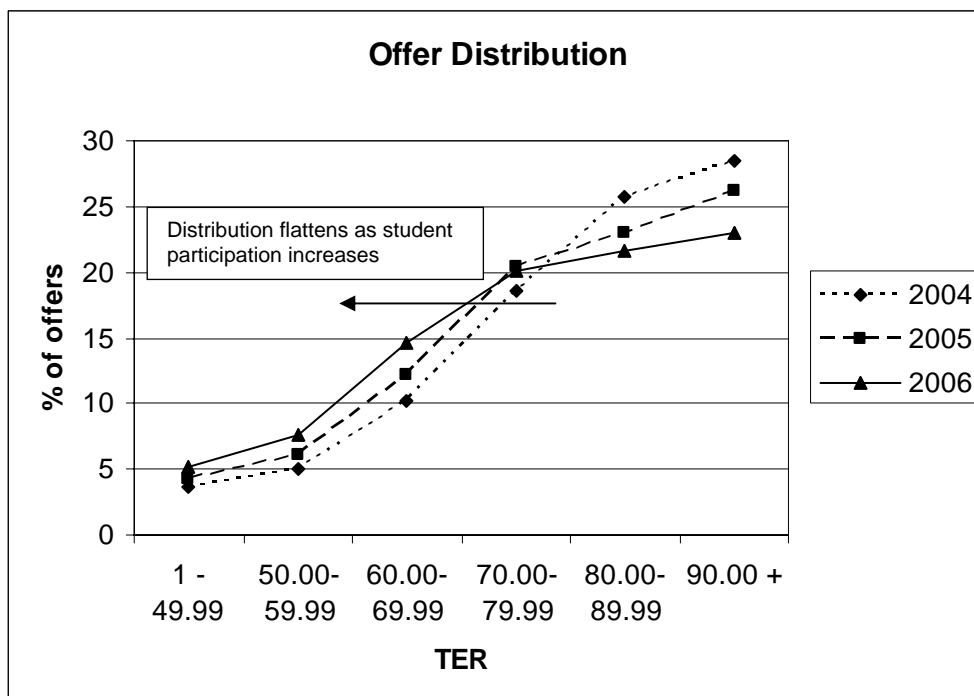


Figure 3: The changing distribution of Tertiary Entry Rank (TER) of offers made for Victorian university places for 2004, 2005 and 2006. [Source: Victorian Tertiary Admission Centre, VTAC data].

This change in academic preparation raises many questions for universities. Is TER an accurate measure of likely university success? Are we “dumbing down” the system? Should students with relatively low TER aspire to university study? Might there be better alternative for low-TER students? These are all interesting questions and as the system is expanded they must be addressed.

Figure 4 plots data for Swinburne University of Technology showing progress rates as a function of TER for school-leaver students (i.e. students who complete Year 12 and directly enter university). Clearly, there is a strong relationship between TER and the academic success of students. It should be noted that progress rate is not an ideal measure of student success. Students who elect to transfer between courses or to another university or make a decision to take a leave of absence are all counted as not having progressed. Despite these short-comings, the result in Figure 4 is clear. The data raises a number of questions. Is such a result inevitable - weaker students will naturally have higher failure rates? Can less well prepared students be assisted to improve their results?

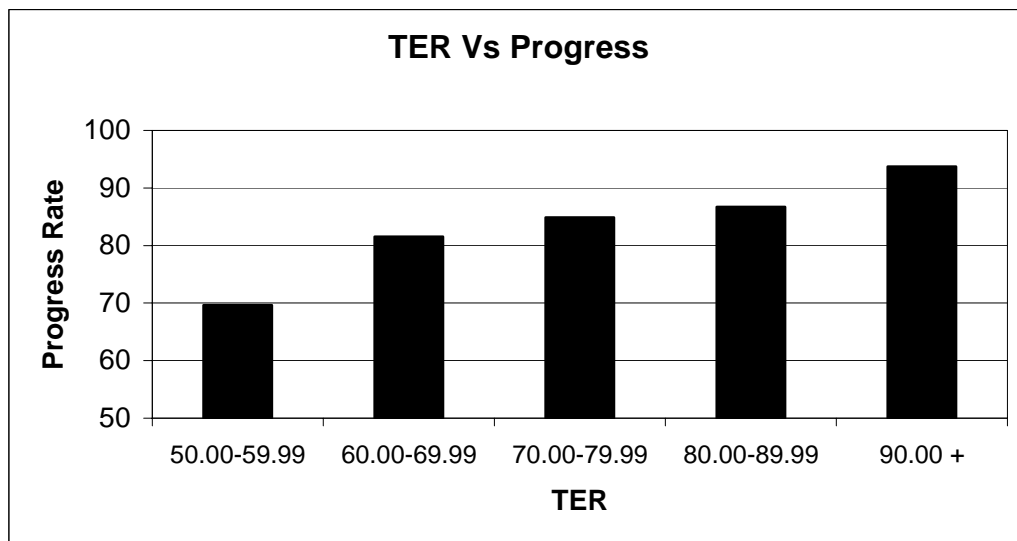


Figure 4: Progress rate of first students who entered university from Year 12 as a function of their Tertiary Entrance Rank (TER). [Source: internal Swinburne University of Technology data].

Interpretation of data such as that in Figure 4 requires an understanding of just what TER actually represents. This measure is widely used for entry to university. Is TER a measure of academic ability or is it a measure of academic preparation? Importantly, can students with relatively low TER succeed at rates higher than those shown in Figure 4?

That TER is influenced by factors other than academic ability is well known. Teese and Polesel (2003)¹ have shown that TER and socio-economic status are well correlated, as shown in Figure 5. This figure shows the mean entry TER for each of the universities in Victoria as a function of the mean socio-economic status (SES). A value of SES=1000 represents the population mean. Two striking features are clear in this figure. Firstly, students from wealthy backgrounds attend the best schools, have a more academically supportive environment at home, achieve high TER and

¹ Teese, R. and Polesel, J., 2003, “Undemocratic schooling: Equity and quality in mass secondary education in Australia”, Melb. Univ. Press, 272pp, ISBN: 0-522-85048-0.

attend the most prestigious universities. As shown in Figure 4, these same students will, in turn, perform best at university. The second feature is that mean values of SES for all institutions are above the population mean of 1000.

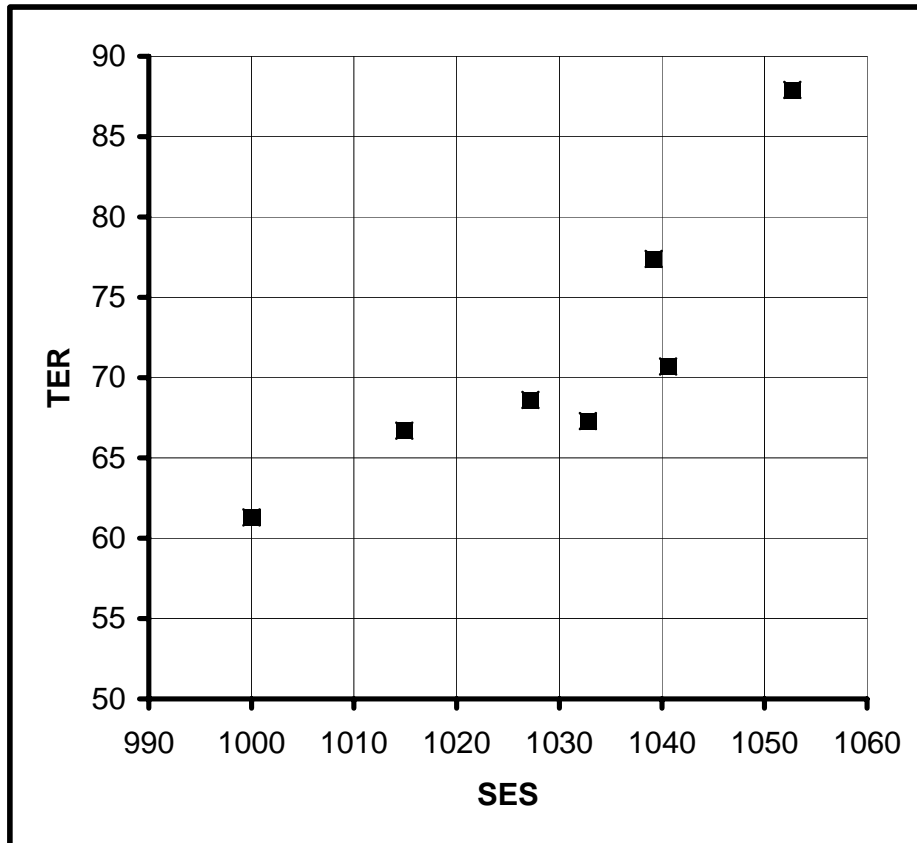


Figure 5: Mean tertiary entrance rank (TER) versus mean socio-economic status for each of Victoria's universities. [Source: Teese and Polesel (2003)¹].

It is clear from the results in Figure 5 that TER is a measure of academic preparation rather than academic potential or ability. Hence, if in the future an increasingly large percentage of school leavers, with inevitably lower mean TER, are to progress to higher education, alternative means will be necessary to ensure this group of students are not excessively disadvantaged by their backgrounds. In addition, enhancing the success rate of this group of students will be essential to ensure this human resource is not wasted and that the increasing need for a more highly educated work force can be achieved.

4. Changing pathways to Higher Education

There is a regular debate in Australia about unmet demand. This debate tends to be superficial and does not account for the changing pathways to higher education. The unmet demand debate tends to suggest that students who fail to obtain their desired place in a university have lost all hope of such an education. In reality, there is a significant and growing pathway to higher education through TAFE and other VET pathways. These pathways typically take the form of students undertaking a diploma or advanced diploma in TAFE and then articulating into a university degree with advanced standing as a result of their prior TAFE study.

The number of students who elect this pathway and ultimately enrol in a university degree is difficult to determine. University data reporting systems are presently not

designed to accurately record this information. DEST has recently introduced changes to address these deficiencies. Unofficial data collected at Swinburne University of Technology indicates that, nation-wide, perhaps 10% of higher education students utilize this pathway. A number of institutions have actively developed this pathway (eg. Swinburne, Western Sydney, Deakin) and have numbers far higher than this national average. In 2006, approximately 28% of commencing students at Swinburne articulated from TAFE.

Although the average TER of students who adopt this pathway is unknown, it is reasonable to assume that their average TER is low, most probably between 50 and 60. As noted in Figure 4, students with values of TER in this interval are likely to have low progression rates if they enrol directly in Higher Education. Data on the progression rates of students at Swinburne has been kept since 2000. Table 1 shows the average progression rates of the different cohorts of students in 2006.

Basis of Admission	Average Progression rate
Year 12	83.4
TAFE/VET	84.5
Other	79.6

Table 1: Average progression rates for different cohorts of students at Swinburne University of Technology in 2006.

The results shown in Table 1 are typical of those achieved in each year for which data has been collected (6 years). Within the statistical variability of the data sample, it can be concluded that students articulating from TAFE achieve at approximately the same level as students who entered from Year 12. As shown in Figure 4, a progression rate of 84.5% (Table 1) is typical of students with a TER in the band 80 – 90. This is a remarkable result since, as noted above, this cohort of students probably have TER values between 50 and 60. Opting to take the pathway through TAFE has resulted in achievement levels equal to students with TER values 30 point higher than this cohort.

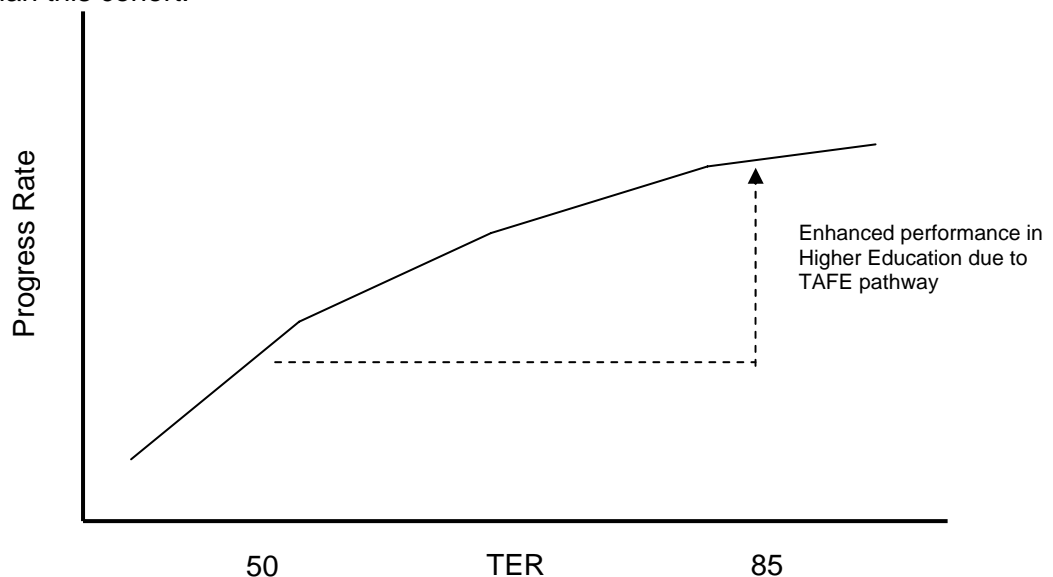


Figure 6: Diagrammatic representation of enhanced student performance brought about by the provision of a preparation pathway.

It is believed that there are a number of reasons why there is such a dramatic increase in performance for low-TER students who utilize the VET-articulation pathway. These include:

- TER is largely a measure of educational preparation, not educational ability. As such, greater preparation enhances performance.
- University, by its nature, is aimed at building independent research and learning in students. Therefore, poorly prepared students, who are not ready for such independent development, struggle.
- TAFE/VET provides greater assisted study techniques. The educational pedagogy is a natural bridge – more independent than school, but more supportive than university.
- The articulation pathway allows the students to mature. Typically, students receive a maximum of 1.5 years Higher Education credit for 2 years study in TAFE. This enables the student to mature and not to be accelerated into university study too rapidly. Although there is always pressure to provide a greater level of credit for TAFE study, anecdotal evidence suggests that such a move would disadvantage students and decrease success in university study.

5. The International Perspective

Pathway development, such as described above is a key element of the US Higher Education system. Community colleges within the US form an important part of the system, educating many students in 2-year programs who then articulate to 4-year colleges and Universities. Compared to Australia, there is a much greater level of collaboration between community colleges and universities. For instance, the American College on Education (ACE) represents the Presidents of all institutions, whether they are 2-year or 4-year in nature. ACE acts as a supportive resource and a powerful political lobby group.

The community college pathway is viewed by many US students as a desirable path to a degree. It is both less expensive and provides a better educational preparation than progressing directly to university.

Other international experiences have been less positive. The Foundation Degree introduced in the UK has not been particularly popular with students. This may simply be a transition issue, but it is also probably because it is offered by universities, alongside traditional degrees. In this setting, the Foundation Degree naturally appears as a “second best” option.

6. A Pathway Model for Australia

The data presented above provides a compelling case, based on educational outcomes, that poorly educationally prepared (low TER) students should proceed to university through a pathway, rather than enrol directly in degree programs at university. This section will present a model to achieve this outcome. The following section will provide an economic analysis to show that such a structure also has economic advantages to Australia.

It is proposed that Australia move to a system where all students with a TER (or other selection criteria) below a certain value enter a pathway program offered through TAFE rather than enrol directly in university. The details of how this would work are outlined below:

- a. A minimum TER is set for university entry (either nation-wide or university specific). Students below this limit could not enter university directly, but would proceed through a TAFE pathway.
- b. The TAFE pathway would be an Associate Degree rather than a Diploma. The Associate Degree is better equipped to act as a pathway as it is curriculum based and hence consistent with the requirements of the Degree.
- c. The Australian Qualifications Framework (AQF) indicates that the Associate Degree offers both an exit point and a fully articulated pathway into the Bachelor Degree. This is a direct translation from the US experience where the 2-year qualification articulates into the 4-year degree. It is difficult to believe that it will be possible to take students who are poorly educationally prepared, provide them an exit qualification at two years (something a degree does not do), bring them up to the same standard as better prepared school leavers and allow them to mature. After this, they would need to transfer, become adjusted to university study and complete their final year. Although this may be possible in a 4-year US degree, it seems a demanding requirement in the already compressed 3-year Australian degree. Therefore, until proven otherwise, it is believed that the Associate Degree should articulate with 1 1/2 years credit, as is presently the case with the Diploma and Advanced Diploma.
- d. The cost structures within TAFE are less than within universities (see next section). Therefore there are significant cost advantages in such a proposal.
- e. The scheme would be funded by transferring a proportion of the present government funding for each student from the university sector to TAFE. A proportion of the funding would remain with the university sector, thus resulting in a smaller but better funded university sector.
- f. The proportion of the funding transferred to TAFE would be at least equal to the present funding rates within TAFE. In addition, HECS would be extended to these Associate Degree programs in TAFE. The rate of HECS would be less than in corresponding degree programs. As a result, TAFE Institutes will also become better funded and students will have both educational and financial incentives to proceed through the pathway.

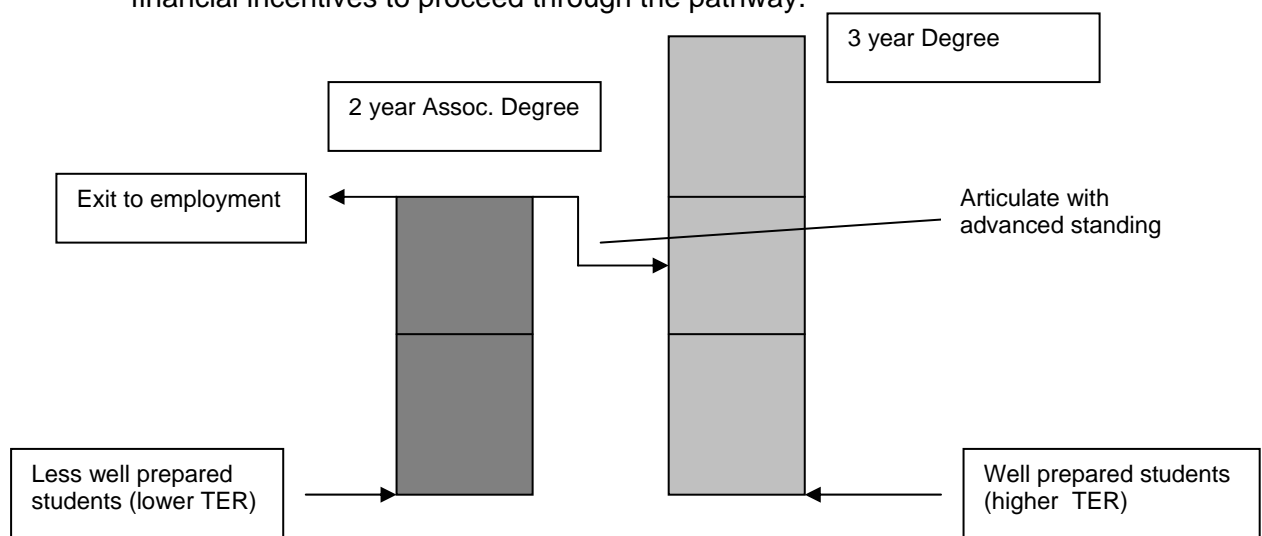


Figure 7: Diagrammatic representation of degree and employment pathways.

7. Financial Analysis

The analysis below makes a number of assumptions and is intended as an illustration of how the system might work, rather than a detailed proposal.

TAFE and Higher Education are funded for domestic students in quite distinct ways. These can be summarised as follows:

Higher Education Funding

The funding for each year of the course consists of a component provided from the Commonwealth (the Commonwealth Grant Scheme, CGS) and a component funded by the student (the Higher Education Contribution Scheme, HECS). The rates of both CGS and HECS vary by discipline. This funding must cover both instruction to the student and infrastructure.

TAFE Funding (based on Victoria)

Each hour of instruction (Student Contact Hour, SCH) is funded. This component does not include any allowance for infrastructure, which is funded separately. The SCH funding rates vary by discipline.

7.1 Indicative Cost Structures

The cost structures within TAFE are lower than in Higher Education since the levels of academic qualifications of staff are generally lower and the expectations to carry out research do not exist within TAFE. As explained earlier, such an approach is appropriate for sub-degree programs, however, a research environment is considered important for a university Degree.

Below, calculations are carried out for typical costs associated with teaching a student for one year in (a) Business and (b) Engineering. These choices give typical extremes of low and high cost disciplines.

Higher Education		TAFE	
<i>Business</i>		<i>Business</i>	
CGS	\$2,515	700SCH x (\$7.54+\$1.15) ²	
HECS	\$7,118		
Total:	\$9,633	Total:	\$6,083
<i>Engineering</i>		<i>Engineering</i>	
CGS	\$12,476	700SCH x (\$11.3+\$1.15)	
HECS	\$7,118		
Total:	\$19,594	Total:	\$8,715

Table 2: Cost of teaching in TAFE and Higher Education

As can be seen above, the cost of teaching Engineering is significantly higher than Business. In both cases, the cost advantage of TAFE is clear. Note that in the above, it is assumed that the Associate Degree (TAFE program) has 700SCH. This would equate to more than 26 hours per week over two 13 week semesters. This is significantly higher than in a Higher Education degree, but is a critical part of the

² \$7.54 per SCH for instruction plus \$1.15 per SCH for infrastructure. The infrastructure figure is based on expenditure in Victoria in 2005.

more assisted mode of learning in TAFE, essential for developing the academic abilities of less well-prepared students.

As an example of the revenue sharing proposal core to the proposed model, it is assumed that:

- a. The present CGS component is shared between the two sectors in the ratio 35% Higher Education, 65% TAFE.
- b. That the student is charged a HECS rate in TAFE which is 75% that in Higher Education. The reduced rate takes into account that the student will complete 2 years of study in TAFE and receive 1.5 years of credit in Higher Education. Thus the reduced HECS rate ensures that the total HECS payable on the degree qualification is not changed compared to the present situation.

Higher Education		TAFE	
<i>Business</i>		<i>Business</i>	
CGS	\$880	CGS	\$1,635
		HECS	\$5,339
Total:	\$880	Total:	\$6,973
<i>Engineering</i>		<i>Engineering</i>	
CGS	\$4,367	CGS	\$8,109
		HECS	\$5,339
Total:	\$4,367	Total:	\$13,448

Table 3: A possible investment sharing arrangement for typical articulating students, allowing an enhanced public investment in both sectors.

By comparing Tables 2 and 3, it can be seen that there is a net funding increase of \$880 (Business) and \$4,367 (Engineering) per student to Higher Education. In addition, the funding to TAFE is more generous than present levels by \$850 (Business) and \$4733 (Engineering). Financially, both TAFE and Higher Education would benefit from the proposal.

Under such a scheme, it would be necessary to determine the threshold below which students should progress through the pathway Associate Degree. For illustrative purposes, a figure of 65 (TER) has been selected. Based on Figure 3, it can be estimated that approximately 19% of all offers to university in Victoria in 2006 did so with a TER below 65. If it were assumed that 19% of all admissions were also with a TER less than 65, then this would equate to approximately 80,000³ EFTSL of student load within Higher Education. As such, students would spend half of their total educational duration in TAFE, at any one time 40,000 EFTSL would be involved. Based on a mid-point figure of approximately \$3000 (between the Business and Engineering figures shown in Table 3), this would represent a net gain to both sectors of approximately \$120M. This effective “additional investment” would increase as the percentage of school leavers seeking university study increases.

³ Based on DEST data and a total of 400,000EFTSL of student load

8. Conclusions

It is clear that the future economic development of Australia will require an increasingly large proportion of the school-lever population to progress to tertiary education and, in particular, higher education. It is also desirable that the graduates of degree programs not simply have technical knowledge but have independent research skills and the ability to critically analyse and evaluate a range of options. The development of such skills requires an educational system which fosters and enhances independent development. These attributes are presently core to degrees offered by our universities. The development of such attributes does, however, require students to be educationally well prepared. The lack of such preparation will mean that students will ultimately struggle in an “independent learner” environment.

This paper clearly demonstrates that as the number of school-leavers seeking degree-level education increases, an increasing proportion of such students will be educationally poorly prepared. As a result, a high percentage of these students will struggle in their degree studies. In order to meet the needs of Australian society, alternative means need to be found to educate many students in such an expanded Higher Education system.

The data clearly shows that less well prepared students can significantly enhance their performance by progressing to university study through a pathway such as an Associate Degree. In addition, this pathway has financial advantages, thus freeing up resources which can be invested in further developing the quality of both university and TAFE systems. The Associate Degree pathways proposed in the paper will:

- Meet the nation’s needs for an increasing percentage of degree-level graduates
- Enhance the graduation rates of all students
- Provides a cost-effective process to expand tertiary education
- Enables government to further invest in the quality of post-secondary education.