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Student performance and the cost of failure

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Student Performance and the Cost of Failure

Abstract

This paper examines student performance and calculates the theoretical cost of academic failure by Australian undergraduates, using factors implicit in government funding formulae. In order to survive, higher education institutions have had to diversify their funding base and at the same time the government appears now to perceive its contributions as a subsidy to university students, rather than as being an investment in society's broad human infrastructure. The demand for accountability has increased, and there has been considerable discussion of output-based funding. The ultimate university 'output' is student success, and governments could place a monetary value on this in a very direct way.

Introduction

Australian higher education has gone through something of a revolution over the last decade. The reform process began with the Green Paper ('Higher Education, a Policy Discussion Paper') released in December 1987, followed by the White paper (‘Higher Education - a Policy Statement’) in July 1988 (Dawkins, 1987, 1988). The policy changes which followed sought to increase access to, and to improve diversity and efficiency within the system[1]. The changes altered the face of Australian higher education, and they certainly promoted wider access to Australian higher education, with total enrolments increasing by nearly 61% from 394,000 to 634,000 in the decade 1987/1996.

There has also been extensive discussion of performance- or output-based funding. To date, output funding schemes have been restricted to about 5% of total government funding, for research and equity-related schemes, although the flurry of proposals for key performance indicators during 1996 and 1997 may indicate an impending hardening of the trend. An output measure which looks at rewarding universities for their students’ ‘success’ could be one direction which the government might take.

The Extent and Cost of Failure

This paper reports on undergraduate performance and the theoretical cost of academic failure in 1996. It might be argued that this imposes a rather limited view of universities and university education. It goes without saying that to calculate ‘cost’ in this very direct way overlooks the benefits that students receive by attending university, irrespective of their passing or failing. Many students fail one or two subjects during their studies, but ultimately meet the goal they set out to attain: a university degree. Any exercise which purports to calculate the cost of failure will produce a high figure, simply because large sums of money are required to fund a higher education system in the first place. To a certain extent, it also assumes that universities can avoid failure, and it perhaps overlooks the fact that part of universities’ function should be to ‘cull the incompetent’. Nonetheless, universities need to be aware of the extent of student failure in the various disciplines, and the amount of resource which was used (or should have been used) in creating that outcome. Applying a dollar value to failure might focus the minds of university teachers and managers as they consider ‘value adding’ for their students.

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[1] Five major policy changes were set in place via the Dawkins reforms, as follows:

- **Abolition of the binary divide** between ‘universities’ and ‘colleges of advanced education’.
- **Changing the structure of research funding**. Under the binary system, ‘colleges’ received no funding for research.
- Introduction of agreements between institutions and the government, called **"Educational Profiles",** on the range of activities to be funded.
- **Reintroduction of tuition ‘fees’ for local students**. The government introduced a device for funding some of the expansion of the higher education system: the Higher Education Contribution Scheme, or **HECS**. It is an income contingent charge introduced in 1989, and imposed on the majority of students in Australian higher education. It was to be the mechanism by which massification in Australian higher education could occur. HECS was originally set to recover 20% of the costs of an average course. In 1996, about 80% of all students enrolled at Australian universities higher education were HECS-liable. The other 20% included students on government HECS Exemption scholarships (5%) and students paying fees (13%) which covered some or all of the cost of their courses. If fee-paying international students are excluded, virtually all bachelor students are liable for HECS.
- **Introduction of Relative Funding.** In the White Paper, the government made a commitment to fund institutions on the basis of what they do, rather than on what was described as "historical precedent and arbitrary classification".

The authors have undertaken work on student progress and performance in the past (Dobson & Sharma, 1993) but this did not extend to costing. Whether looking at relative student progress, or the costs attributable to student failure it is not so much the overall figures which are interesting, but rather the variations **within** the total.

The analysis in this paper was undertaken using the very thorough Australian higher education statistics collection. Universities report students' results annually, on a subject-by-subject basis, and it is therefore possible to establish university students' failure rates, for instance, by discipline, by sex, or by enrolment type (full time, part time, external). It is also possible to extend this process, and calculate the cost of failure using the government's own funding formula. Therefore it is also possible to establish which groups of students within the system 'cost' more than others in terms of subject failure. This, of course, presumes that standards are common across the system, but we are regularly assured that this is the case.

The cost of failure has at least two dimensions: a public (government funded) component and a private component (because students are liable to pay fees to cover part of their tuition costs). The **public** cost can be extrapolated from published expenditure figures and the fairly transparent formula which is used to calculate each university's recurrent funding. The bulk of operating grant funding provided to universities is based on negotiated student numbers targets. For reporting (and other) purposes, students are counted in terms of 'equivalent full time student units' (EFTSU). For funding purposes, (to simplify the process somewhat) the EFTSU measure used in universities' student targets is 'weighted', with funding calculations based on relative costs involved in the teaching of various disciplines, at various levels. For instance, it costs rather more to teach laboratory-based science, medicine or engineering subjects than it does to teach the 'chalk and talk' subjects which are more common in business or humanities programs, and this is appropriately reflected in funding arrangements. These relative teaching costs have been summarized into a two-dimensional 'relative teaching costs' matrix, which was based on the level of the teaching to be provided, and its discipline. **Appendix 1** provides a brief summary of the background to, and the workings of Australia's 'Relative Funding Model' exercise.

There is also a **private** cost component of failure, because most Australian students also pay (or become liable for) partial fees, in the form of the Higher Education Contribution Scheme (HECS). This additional 'cost' of students' failure is in fact borne by themselves (or is at least a contingent liability). Therefore, both the public and private aspects of the cost have been taken into account.

Cost calculations have been based on 1996 data, this being the year for which the most recent subject completions statistics and financial data were available.

Student Numbers

In 1996, there were just over 634,000 students enrolled in Australian university courses, including nearly 475,000 in bachelor courses (the focus of this paper). Over 37,000 overseas bachelor students, who are self-funded or fully sponsored, were excluded from calculations. Student numbers have been expressed in 'equivalent full time' terms, and the 437,000 Australian bachelor course students generate over 338,000 equivalent full time student units (EFTSU). In order to translate EFTSU into funding, they must first be 'weighted', in accordance with the methodology originally used to calculate funding levels. (The table in **Appendix 2** shows student load distributions and the weighting factors used in 1996, which it is hoped will render transparent the tables which follow).

Table 1 summarises enrolments, student load (EFTSU) and Weighted student load (WEFTSU) for 1996:

Table 1 Enrolments, Student Load (EFTSU) and Weight Student load (WEFTSU)
Australian Students - 1996

	All Course Levels	Bachelor Students
Enrolments (People) (1)	634,094	474,754
Enrolments (People) – Overseas only (2)	(53,188)	(37,387)
Enrolments (People) - Australian	580,906	437,367
Equivalent Full Time (EFTSU) (3)	438,401	338,190
Weighted EFTSU (WEFTSU) (4)	**664,931**	**503,971**

Source: (1) DEETYA Selected Higher Education Student Statistics - 1996. Table 7
(2) DEETYA Selected Higher Education Student Statistics - 1996. Tables 63
(3) DEETYA Aggregated data set, submission 3 1996 (unpublished.
(4) DEETYA Aggregated data set, submission 3 1996 (unpublished), 'weighted' per the methodology set out in Appendix 1, and disaggregated for Bachelor students in Appendix 2.

Student Performance

Australian universities provide statistical data files to the Government three times each year. Students' subject results are reported in the academic year following the one they were attempted. Subject results for 1996, reported by universities in February 1997 have been used for this paper.

Universities report students' subject results as follows:
- Student **withdrew** from subject, without penalty;
- Student **failed** subject;
- Student **passed** subject;
- Subject is **incomplete**,

and Table 2 provides a summary of subject results obtained by bachelor degree students in 1996:

Table 2 Weighted Equivalent Full Time Students - Bachelor Courses – By Result Type 1996

WEFTSU	Withdrawn	Failed	Passed	Incomplete	Total
Bachelors- No.	12031	55272	425929	10739	503971
Bachelors- %	2.4	11.0	84.5	2.1	100.0

Rounding Errors Apply
Source: DEETYA Aggregated data set, submission 3 1996 (unpublished).

The overall subject failure rate among bachelor degree students in 1996 was 11.0%, with students successfully completing 84.5% of the subjects they attempted. (An additional 2.1% of subjects were reported as ‘incomplete’, indicating that either a result had not yet been recorded for some subjects, or that some students were enrolled in subjects which spanned more than one academic year).

On the face of it, 11% does not seem to be a particularly high failure rate, but academic performance was not uniform across the system. The wide variations in students’ success in the subjects of different discipline areas, sex and enrolment types in 1996 is evident from Table 3:

Table 3 Australian Bachelor Students - Weighted Equivalent Full Time Student Units (WEFTSU) (for subjects failed by students) by Discipline, Sex, Enrolment Type & Result Type– 1996

	WEFTSU for Subjects Failed						
Discipline	**Total**		**Sex**		**Enrolment Type**		
	No.	%	Female Students	Male Students	Full Time Students	Part Time Students	External Students
Non-English Languages	983	9%	8%	11%	8%	10%	13%
Behavioural Studies	1913	9%	8%	13%	9%	10%	14%
Social Studies	3535	10%	8%	13%	9%	11%	14%
Humanities	3775	12%	10%	15%	12%	12%	17%
Education	1975	7%	6%	10%	6%	8%	11%
Science	11125	12%	10%	14%	12%	15%	15%
Mathematics	4563	21%	17%	23%	20%	23%	31%
Computing	5031	17%	14%	19%	17%	17%	25%
Visual Arts	2188	7%	6%	10%	7%	10%	12%
Engineering	5690	12%	10%	13%	12%	14%	23%
Medicine/Vet./Dental	559	2%	2%	3%	2%	7%	4%
Other Health	2014	5%	5%	7%	5%	7%	7%
Admin./Economics/Law	9981	14%	12%	16%	13%	13%	22%
Built Environment	1147	9%	7%	10%	8%	13%	16%
Agriculture	793	8%	6%	10%	8%	12%	9%
Total - No.	**55272**		**23330**	**31944**	**43976**	**7504**	**3794**
Total - %		**11%**	**9%**	**14%**	**10%**	**13%**	**17%**

Rounding Errors Apply
Source: DEETYA Aggregated data set, submission 3 1996 (unpublished).

The table reveals that at the lower end of the failure scale, in the Medicine/ Dental Science/ Veterinary Science discipline, the failure rate was 2%, and in Other Health disciplines (including nursing), the failure rate was 5%. At the other extreme, the failure rate in Computing was 17%, and in Mathematics was 21%. Even if 11% is not a high overall rate of failure, 21% failure in mathematics does seem high. Why do students perform so relatively poorly in this discipline? Are they poorly prepared at school? Should universities be devoting more teaching resources to remediation programs in mathematics?

Table 3 further shows that woman have lower rates of failure than men in all disciplines. This includes the two disciplines in which students have the most difficulty, Computer Science and Mathematics. In fact, there is a marked difference in all disciplines between men's and women's performance, including Engineering/ Surveying. Much of the attention of equity practitioners in Australia has been on improving the access and progression of female students. Enrolments in bachelor courses by women have now reached about 55%, with women being statistically over-represented in several disciplines, so the access battle would seem to be won. On top of this is women's superior performance in all disciplines. Perhaps future gender equity policy may need to be re-examined.

Most bachelor students are enrolled 'full time', with relatively small numbers of part time and external (distance education) students. However it can be observed that there is wide variation between students according to their enrolment type. In particular, it can be seen that external students do very poorly in comparison with the internal (attending) students, but that full time attendance produces the best proportionate result in terms of subject passes. The size of the difference between full time and external students is noteworthy in some disciplines. In Mathematics, which these tables indicate to be the most difficult discipline for bachelor students, there is an 11% gap between the performance of full time and external students, and a gap of 8% between part time and external students. Wide variations in performance are also noted between full time and external students in several other disciplines. Distance education is one of the ways in which university education can be provided to students who might otherwise miss out. Universities should also be aware of the relatively poor performance of their external students when compared with on-campus students in the same disciplines. Perhaps this raises an issue about the levels of support provided to distance education students.

Higher Education and the Cost of Failure

The task of calculating the cost of failure is simple in theory, but in so far as the public component is concerned, there could be differing views as to **which** government expenditure figure is the appropriate one to use in such an exercise. It is quite reasonable to argue that some of the operating grant funding provided by government is for purposes other than teaching, so therefore it would be appropriate to discount the 'Total Funding' figure to allow for non-teaching purposes. Research is the main non-teaching activity funded through government grants. Although the amount actually diverted to research will vary in different departments at different universities, it has oft been suggested that about 30% of expenditure is research-related[2]. It is also fairly common for cross-subsidisation to occur. For example, the reality is that it costs universities rather less per student to teach large first year classes, compared with teaching smaller third and fourth year options. It could also be argued that other sums should be removed from the calculation of the cost of failure, such as 'infrastructure' costs, for libraries, information technology, administration etc. It is harder to accept this argument, because these infrastructure costs are components of the cost of teaching, and should therefore be taken into account.

According to published finance statistics for 1996, the total of Commonwealth Government grants to universities was just under A$4.6 billion (DEETYA, 1997). From Table 1 (above) we can see that bachelor students accounted for 76% of weighted EFTSU, we have assumed that only 70% of operating grant funding was devoted to teaching, and from Table 2 we know that the rate of failure overall is 11%. The public 'cost of failure' formula, then is:

Public cost of failure (1996) = A$4.6bill.*0.76*0.7*0.11

as laid out in Table 4. This formula reckons the public 'cost of failure' to have been about A$269million in 1996:

Table 4 Calculation of Cost of Failure, 1996

		A$ (million)
Government Expenditure - All students	(1)	4,600
Government Expenditure - Bachelor students (76% of all WEFTSU)	(2)	3,496
Government Expenditure - Bachelor students (excluding 30% 'Research')		2,447
Cost of Failure - Bachelor students (11%)	(3)	269

Sources:
(1) DEETYA – Finance Statistics 1996 – Table 1
(2) See WEFTSU row in Table 2, above.
(3) See Table 2, above.

[2] The Government's research data collection – The Australian Bureau of Statistics' 'Project Score' collection has suggested for several years that 30% is an appropriate average for university departments which don't have internal knowledge that the proportion of research effort is higher or lower than 30%.

As noted above, the A$269 million of public funding is not all of the 'cost' of failure. Australian students are liable for partial fees, in the form of HECS, a charge they can elect to meet by paying in advance, (and receive a 25% discount. Only about 20% of HECS liable students chose this option). Alternatively, the liability can be met via the taxation system. Using this 'deferred option', students start to repay their HECS liability when their annual income reaches A$20,000. Of course, students who never reach this level of annual earnings (e.g., if they leave Australia, are in low paid work, or if they never enter the workforce) will not repay HECS. In calculating the direct cost of failure to students themselves, it is necessary to use unweighted EFTSU, because (prior to 1997) all students were liable for the same rate of HECS, irrespective of the relative cost of teaching the courses they were enrolled in.

The rate of HECS per EFTSU was set at about A$2500 in 1996, and subjects failed by students accumulated to 38,217 EFTSU. About 80% of students elect to meet their HECS liability via the taxation system, the other 20% of students opting to receive the 25% discount by paying up-front. We have assumed that this 80/20 distribution holds for both failed and passed subjects.

The formula for this component of cost can be defined as:

Private 'cost of failure'(1996)= Failed EFTSU*HECS
= 38,217 (.8*2500 + .2*1875)
= A$90.765mill.

Allowing for these assumptions, the private component of the cost of failure amounts to almost A$91million, with over A$14 million of this being 'lost' by students who had paid up front, and about $76 million being owed by students in the form of a deferred liability. The total of public and private cost of failure in 1996 can therefore be estimated to be about $360 million.

Economists might also include in the private cost of failure the opportunity cost of the time students spent failing subjects. Arguably, those students could have been earning an income (and paying tax on those earnings), instead of attending university studying for subjects which they would not ultimately pass in the current academic year. This additional element of private cost has not been estimated in this paper.

Just as student performance varied between disciplines, also does the ‘cost of failure’. Table 5 summarizes the public and privately funded ‘cost’ of failure, by discipline.

Table 5 Australian Bachelor Students - Cost of Failure: Public & Private by Discipline, 1996

	WEFTSU Failed	Public Cost A$	EFTSU Failed	Private Cost A$			Total Cost A$
Discipline				Deferred	Up-Front	Sub total	
Non-English Languages	983	4.78	614	1.23	0.23	1.46	6.24
Behavioural Studies	1913	9.31	1472	2.94	0.55	3.49	12.80
Social Studies	3535	17.20	2720	5.43	1.02	6.45	23.65
Humanities	3775	18.37	3775	7.55	1.42	8.97	27.34
Education	1975	9.61	1519	3.04	0.57	3.61	13.22
Science	11125	54.14	5057	10.11	1.90	12.01	66.15
Mathematics	4563	22.21	3510	7.02	1.32	8.33	30.54
Computing	5031	24.48	3144	6.29	1.18	7.47	31.95
Visual Arts	2188	10.65	1367	2.73	0.51	3.25	13.90
Engineering	5690	27.69	2587	5.17	0.97	6.14	33.84
Medicine/Vet./Dental	559	2.72	207	0.41	0.08	0.49	3.21
Other Health	2014	9.80	1259	2.52	0.47	2.99	12.79
Admin./Eco./Law	9981	48.58	9981	19.96	3.74	23.71	72.28
Built Environment	1147	5.58	717	1.43	0.27	1.70	7.29
Agriculture	793	3.86	294	0.59	0.11	0.70	4.56
Total	55272	269.00	38222	76.43	14.33	90.77	359.77

Rounding Errors Apply

Administration/Economics/Law is the discipline for which overall cost of failure is highest, followed by Science. The private cost of failure in Administration/ Economics/Law is nearly twice as much as Science. The reason for this is that there are very many more students in Administration/Economics/Law than in Science, and public funding is based on weighted values, whereas (prior to 1997) HECS was levied at the same rate on students in all disciplines. Engineering, Computing, Mathematics and Humanities follow in terms of overall ‘cost of failure’.

Table 6 (below) takes the ‘cost’ distribution a step further, to show overall cost of failure by sex and by enrolment type. ‘Costs’ are closely related to the number of students enrolled in each category, and of course are matched indirectly with the performance of each group of students (see Table 3, above). Cost by sex, for instance, is influenced by the disciplines studied by students of each sex. The starkest examples relate to Engineering, which is primarily a male discipline, compared with, say, Education or Humanities, which have relatively higher numbers of female students. In terms of overall cost however, it remains that 45% of total bachelor enrolments (i.e. male enrolments) generate 57.4% of the cost from failure.

A similar pattern holds when examining Enrolment Type. Whatever the attraction of external studies, it remains that off-campus bachelor students fail more subjects on average than their on-campus counterparts. Similarly, when looking at on-campus students, part time students fail more subjects than full time students. This explains (in part at least) the performance and 'cost' situation in Administration/Economics/ Law, in which relatively large numbers of students attend part time.

Table 6. Australian Bachelor Students -Cost of Failure:
Public & Private by Discipline, Sex & Result Type – 1996

	Cost of Failure: Public & Private					
Discipline	**Sex**		**Enrolment Type**			**Total**
	Females	**Males**	**Full time**	**Part Time**	**External**	
	A$	**A$**	**A$**	**A$**	**A$**	**A$**
Non-English Languages	3.84	2.40	4.97	0.90	0.38	6.24
Behavioural Studies	8.19	4.61	9.76	1.89	1.15	12.80
Social Studies	13.63	10.03	17.64	3.36	2.65	23.65
Humanities	15.39	11.95	20.95	3.75	2.64	27.34
Education	8.97	4.25	9.97	1.59	1.66	13.22
Science	29.93	36.22	56.69	7.76	1.71	66.15
Mathematics	9.12	21.42	24.62	3.97	1.95	30.54
Computing	8.00	23.95	24.07	4.76	3.12	31.95
Visual Arts	7.64	6.25	12.21	1.53	0.16	13.90
Engineering	4.01	29.83	28.14	4.69	1.00	33.84
Medicine/Vet./Dental	1.42	1.79	3.02	0.18	0.01	3.21
Other Health	9.34	3.45	10.05	1.97	0.78	12.79
Admin./Economics/Law	30.29	41.99	53.57	10.96	7.76	72.28
Built Environment	2.05	5.23	5.79	1.20	0.30	7.29
Agriculture	1.40	3.16	3.68	0.60	0.28	4.56
Total	153.26	206.51	285.11	49.09	25.56	359.77

Rounding Errors Apply

Conclusion

Using the methodology outlined in this paper, the cost of funding for failure of bachelor degree subjects was about $A360 million in 1996. The calculation itself is a simple one but it is acknowledged that the methodology fails to take account of the benefits of education even to those students who fail some or all of the subjects they have enrolled in. But at the same time, it raises interesting policy issues, particularly about the relative difficulty of some disciplines compared with others. Why, for instance, is it that Mathematics has much lower pass rates than other disciplines? No doubt it is partly because students find mathematics more difficult than other disciplines, but it might also reflect on students' poor preparation in mathematics studies whilst at secondary school. If the latter is the case, it raises the issue about what universities might do to help students catch up, and ultimately succeed in university mathematics.

For all of the theoretical nature of the calculations in this paper, the methodology demonstrates that universities could easily find out which of their students perform better than others, if they do not already know. Given the elementary way in which subject pass rates can be reckoned, and with the bulk of funding provided by governments with their eyes on the bottom line, simple measures such as this could be added to the long list of 'performance indicators'.

The costs calculated in this paper relate to student failure in individual subjects rather than the cost of students dropping out and not completing their courses at all. The cost of the latter in any given year would be lower, because many students who fail subjects either repeat them, or receive some form of concessional pass which does not require them to repeat the subject. Of course, there are also some programs which require a student to repeat all the subjects normally taken in an academic year if they failed a single subject.

However, as noted by Yorke in his study of (course) non-completion in the United Kingdom, the dimension of such costs will no doubt been seen as significant by a government seeking to maximize the efficiency and effectiveness of its higher education system. (Yorke, 1998, p68).

It is also the case that as broader access to higher education has been granted, for instance, to students deemed to have suffered disadvantage, it seems reasonable that governments should expect to bear some additional costs in order to maintain the policy objectives of equity in Australian higher education. In this light, it is to be hoped that governments might start to perceive expenditure on student support services as an investment in the overall 'asset' of a better educated community, rather than seeing it merely as an expense. The threat is that universities might feel disposed to cut expenditure in student support services as a reaction to ever-tightening purse strings. Perhaps the patchy performance across disciplines indicates that universities need to review their student support expenditure decisions (including remediation) in order to improve student performance without reducing output quality.

From the point of view of student failure (or success) as a ‘performance indicator’, both institutions and government need to be careful of how they react to student failure. Yorke suggests that if widened access is the system-wide imperative, then it would be unfair to penalise a university which sought to admit additional students, if the university suffered from higher rates of failure as a consequence. (Yorke 1997, p40). In other words, there would need to be some offset for institutions adopting explicit access targets.

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Appendix 1

Brief Description of the Australian Relative Funding Model

During the restructuring of Australian Higher Education by Education Minister John Dawkins in the late 80s, a ‘Relative Funding Model’ (RFM) was introduced. The intention was to ensure that institutions were able to participate equally in the then new unified national system, to provide an equitable basis on which institutions could compete for funds and to remove funding inequities that were perceived to have existed at that time. The Department of Education, Employment and Training (DEET) commissioned three studies of relative teaching costs, and used the results of these studies to develop the RFM based on a two dimensional matrix, using discipline costs as one axis and course level as the other. A limited number of teaching cost clusters were selected in order to keep the model relatively simple, as shown in Tables 1 and 2 below.

Operating grants for the 1991 – 1993 triennium were computed by DEET by applying these relative funding weights to each university’s target student load. The result of this calculation was compared with what each university would have received under the historically-based, but ad hoc funding model. Those institutions which were more than 3% outside the values calculated by the RFM were provided with additional funds (if the RFM calculated that they were under-funded) or had downward adjustments to their operating grants,) or were required to enrol more students with no additional funding), if they were deemed to be over-funded.

The funding model was to be used once only, for the purposes of determining the 1991 – 1993 operating grants, and thereafter grants were to be determined by making adjustments to the figure calculated for the 1991 – 1993 triennium based on price index movements, plus any funded growth.

Table 1
Relative Funding Model: Clustering of Disciplines

Cluster	Undergraduate	Other Postgraduate	Higher Degree by Research
1	Accounting Admin/Economics Law Other Humanities	Accounting Admin/Economics Law, Education Other Humanities	Accounting Admin/Economics Computing Law, Education
2	Behavioural Science Education Maths/Stats Other Social Studies	Maths/Stats. Other Social Studies	Maths/Stats Nursing Other Built Environment Other Health Other Humanities
3	Computing Nursing Other Built Env. Other Health Other Languages Visual/ Perform. Arts	Computing Nursing Other Built Environ. Other Health Other Languages Visual/ Perform. Arts	Other Languages Other Social Studies Visual/Perform. Arts
4	Engineering Science Surveying	Agriculture Behavioural Science Dentistry Engineering	Agriculture Behavioural Science Dentistry Engineering
5	Agriculture Dentistry Medicine Vet. Science	Medicine Science Surveying Vet. Science	Medicine Science Surveying Vet. Science

Table 2
Relative Funding Model: Relative Teaching Costs Matrix

Cluster	Discipline Weights		
	Undergraduate	**Other Postgraduate**	**Research Degree**
1	1.0	1.4	2.0
2	1.3		
3	1.6	1.8	
4	2.2	3.0	4.7
5	2.7		

Appendix 2: EFTSU and WEFTSU by Completion Status and Discipline Group, WEFTSU Failed by Discipline group, Sex and Enrolment Type – 1996

	Equivalent Full Time Student Units (EFTSU)					Weight	Weighted Equiv. F/T Student Units (WEFTSU)					WEFTSU - Failed				
	W/drawn	Failed	Passed	Inc.	Total		W/drawn	Failed	Passed	Inc.	Total	Females	Males	Full Time	Part Time	External
Non-English Languages	252	614	5976	225	7067	1.6	404	983	9561	360	11307	605	378	783	141	59
Behavioural Studies	474	1472	13854	320	16116	1.3	616	1913	18010	417	20956	1224	689	1459	283	172
Social Studies	891	2720	23408	621	27631	1.3	1158	3535	30430	808	35932	2036	1499	2636	502	396
Humanities	1210	3775	25935	756	31676	1	1210	3775	25935	756	31676	2125	1650	2893	517	365
Education	403	1519	20019	467	22406	1.3	523	1975	26025	608	29130	1340	635	1489	237	249
Science	954	5057	35024	859	41894	2.2	2099	11125	77053	1889	92167	5034	6091	9533	1304	287
Mathematics	533	3510	12663	230	16931	1.3	693	4563	16463	299	22017	1363	3200	3678	593	292
Computing	553	3144	14085	304	18086	1.6	884	5031	22536	486	28937	1259	3771	3790	750	491
Visual Arts	469	1367	16516	552	18904	1.6	750	2188	26426	882	30246	1204	984	1923	241	24
Engineering	397	2587	17068	646	20697	2.2	872	5690	37550	1421	45534	674	5016	4733	789	168
Medicine/Vet./Dental	63	207	8155	110	8535	2.7	171	559	22018	298	23045	247	312	526	32	1
Other Health	345	1259	21045	401	23051	1.6	552	2014	33673	642	36881	1471	544	1582	309	123
Admin./Economics/Law	1728	9981	60924	976	73610	1	1728	9981	60924	976	73610	4183	5798	7397	1513	1071
Built Environment	149	717	6797	292	7955	1.6	238	1147	10875	467	12728	323	824	912	189	46
Agriculture	48	294	3130	160	3631	2.7	130	793	8450	431	9804	243	550	641	104	49
Total	**8469**	**38222**	**284599**	**6918**	**338190**		**12031**	**55272**	**425929**	**10739**	**503971**	**23330**	**31944**	**43976**	**7504**	**3794**

Rounding Errors Apply
Source: DEETYA Aggregated data set, submission 3 1996 (unpublished).