

**Study of the Costs
of Provision
Through the
Medium of Welsh
in Higher
Education
Institutions in
Wales**

Final Report for

HEFCW

**By London Economics
in association with
Professor Geraint
Johnes and Eimir
Burrowes**

June 2006

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Executive Summary

Introduction and background

This is the Final Report of a study for HEFCW on the costs of Welsh medium provision in Higher Education. The study was undertaken by London Economics in association with Einir Burrowes and Professor Geraint Johnes.

The main objectives of the study were to determine the additional costs associated with delivering Welsh medium provision and to assess whether a premium system is the most effective way of providing mainstream support.

Study methods

The main sources of information and views on the issues around the costs of Welsh medium provision and appropriate funding mechanisms have been:

- **Interviews with stakeholders.** The project team interviewed representatives of each of the 12 HEFCW funded Higher Education Institutions (HEIs) in Wales as well as representatives of other stakeholder organisations.
- **Questionnaire for HEIs.** A questionnaire was prepared for issue to each of the HEIs in Wales. The main purpose of the questionnaire was to gather information about the costs of Welsh medium provision as little or no information about the costs of Welsh medium provision in HEIs is available publicly.
- **HESA database.** HEFCW provided data derived from the database of the Higher Education Statistics Agency. This data enabled the examination of the spread of students and modules, Welsh and English medium, across the HEIs and the subject areas.

Additional costs of Welsh medium provision

The additional costs of Welsh medium provision were estimated using three approaches:

- Estimation of the average costs of English medium modules across the sample and comparison to the average costs of Welsh medium modules across the sample.
- Examination of the average cost difference between pairs of similar English and Welsh medium modules.
- A regression analysis which seeks to determine a statistical relationship between the costs per student per credit and a number of explanatory factors including whether the module is provided through the medium of Welsh.

Using these three approaches, and on the basis of the data available from the survey responses, it was concluded that the cost of Welsh medium provision per student per credit is higher than the cost of English medium provision per student per credit.

The main factor driving this cost difference is the number of students enrolled on each module. In interviews most stakeholders also suggested that student numbers are a key issue. Since Welsh medium modules generally have lower student enrolments, they tend to be less viable.

Most stakeholders felt that there were additional costs of Welsh medium provision and that these would not all be accounted for through differences in the number of enrolments. If these cost differences exist then they are not captured in the data used for this study. It may be the case that this data is too limited to capture all of the cost differences.

We have also estimated the additional cost of provision through the medium of both English and Welsh (compared to provision through the medium of English only). Provision in both languages is more costly than provision in English only as there is less opportunity to gain economies of scale. We estimate that this additional cost of provision in both languages is around 25%.

Alternative funding approaches

Under the current funding model, the premium is only available to modules where at least 25% of provision is through the medium of Welsh, though there is no reference in the Reaching Higher target to any specific proportion of Welsh medium provision. Two alternative models that could encourage the development of more modules are removal or reduction of the 25% threshold.

The introduction of a lower threshold might have a beneficial impact if, for example, it was much easier for HEIs to introduce additional Welsh medium provision at a lower level, perhaps by having one Welsh medium tutorial class in each module. Modules with low levels of Welsh medium provision may also be more attractive to students who lack confidence in their ability to pursue their higher education through the medium of Welsh. Success in such a module may encourage these students to take up other modules with higher Welsh medium content. Nevertheless, some may argue that in practice there is likely to be little benefit from funding very low proportions of Welsh medium provision.

Recommendation 1: *The scope for reducing the threshold for Welsh premium funding below 25% should be explored further with consideration given to the likelihood of students benefiting from provision where Welsh medium content is this low.*

Any reduction of the 25% threshold might have the effect of encouraging institutions to introduce modules aimed primarily at gaining the premium funding rather than at furthering Welsh medium provision. At present there

appears to be a lack of clarity about how the 25% threshold should be calculated and that there is limited auditing of the relevant data on Welsh language provision.

As Welsh medium provision expands, and more resources are devoted to it, so the need will grow for more monitoring and verification by HEFCW of the factors that drive funding in order to ensure that funds are allocated properly. This will be the case regardless of whether any adjustments are made to the 25% threshold.

Recommendation 2: *Consideration should be given by HEFCW to the introduction of clearer guidelines on the calculation of the Welsh medium percentage level alongside more monitoring and verification of the data in order to ensure consistency in the allocation of the premium.*

As student numbers on a module rise and the average costs per student fall, there will be a point where the revenue per student just matches the cost per student. A small number of HEIs indicated that they used rules of thumb about break even points in terms of the numbers of students per module. The break even points mentioned to us were in the range 16-20 students.

One potential adjustment to the premium mechanism that would reflect this cost structure would be to only make the premium available in respect of the first y students on each module (where y is a number such as 20). Such an approach would be likely to release resources which could be reinvested in increasing the level of per capita premium for those first y students on each module. An alternative to increasing the per capita premium in this way would be to introduce an additional Welsh medium payment per module. The latter would be different from development funding in that it would be recurrent and not just available as the module was being developed.

Recommendation 3: *The scope for introducing a threshold for the number of enrolments on a module, above which the Welsh medium premium is not offered, should be explored further. Any savings from the introduction of this threshold could be used to increase the level of the premium provided for enrolments below the threshold or, alternatively, to introduce a Welsh medium payment per module. An important consideration will be the level of the threshold. If the threshold is too low, it may not provide adequate incentives for HEIs to increase provision above the threshold. We do not envisage that this approach would replace any development funding that is available.*

1 Introduction

1.1 Background

This is the Final Report for a study undertaken for HEFCW on the costs of Welsh medium provision in Higher Education. The study was undertaken by London Economics in association with Einir Burrowes and Professor Geraint Johnes.

The objectives of the study were to:

1. Determine the additional cost associated with delivering Welsh medium provision in a variety of circumstances over and above those which may legitimately be expected to be met through core funding;
2. Assess whether a premium system is the most effective way of providing mainstream support;
3. Examine whether it is possible to establish some benchmark costs for developing various kinds of new provision beyond what might be reasonably expected within core funding;
4. Quantify the costs associated with delivering collaborative provision

1.2 Structure of this report

The remainder of this interim report is structured as follows.

- Chapter 2 provides a summary of the methods used for this study;
- Chapter 3 gives an indication of the level of Welsh medium provision in 2004/05;
- Chapter 4 discusses the costs of Welsh medium provision and provides some estimates of those costs;
- Chapter 5 discusses the use of a premium to provide additional funding for Welsh medium provision;
- Chapter 6 sets out our conclusions;
- There are also a number of annexes that provide supplementary information.

2 Study Methods

The first phase of this study involved the gathering of information and views on the issues around the costs of Welsh medium provision and appropriate funding mechanisms. Our main sources of data and views have been:

- interviews with representatives of the Higher Education Institutions and other stakeholders;
- a questionnaire sent to the HEIs; and
- analysis of the HESA database.¹

Each of these sources is described briefly below. We use the information gathered through these mechanisms in our discussion of the relevant issues in subsequent chapters of this report.

2.1 Interviews with HEIs

The project team interviewed representatives of each of the 12 HEFCW funded Higher Education Institutions (HEIs) in Wales between mid January 2006 and early March 2006. A list of interviewees is provided at Annex 1.

In advance of the interviews we sent interviewees a letter indicating the issues that we would like to discuss. We also sent a draft of the questionnaire and asked for comments on its structure and drafting. A copy of this letter (in English and in Welsh) is attached at Annex 3.

2.2 Interviews with other stakeholders

The project team interviewed representatives of other stakeholder organisations between mid January 2006 and early March 2006. A list of interviewees is provided at Annex 2.

Organisations represented were:

- Open University in Wales
- University of Wales
- Coleg Menai
- Education and Learning Wales (ELWa)
- Welsh Assembly Government
- National Union of Students (NUS) Wales

¹ Higher Education Statistics Agency.

In advance of the interviews we sent interviewees a letter indicating the issues that we would like to discuss. A copy of this letter (in English and in Welsh) is attached at Annex 4.

2.3 Questionnaire for HEIs

A questionnaire was prepared for issue to each of the HEIs in Wales. The main purpose of the questionnaire was to gather information about the costs of Welsh medium provision. Little or no information about the costs of Welsh medium provision in HEIs is available publicly. HEIs do not break down costs in this way as part of their data returns to HESA and they do not appear to use internal accounting systems that would provide a useful source of data either.²

2.4 Analysis of the HESA Database

HEFCW provided us with data derived from the HESA database. This data enabled us to examine the spread of students and modules, Welsh and English medium, across the HEIs and the subject areas.

2.5 Other Useful Material

We have also collected some other useful documentary material, mainly relating to work on costs that has been undertaken in the Further Education sector. This includes material from ELWa and some cost information from one FE College. We also have cost information relating to the Welsh medium postgraduate scholarship scheme.

² More details about the survey are provided in Section 4.4.1.

3 Welsh Medium Provision in Higher Education

3.1 Policy background

The Welsh Assembly Government's strategy for higher education in Wales to 2010, *Reaching Higher*, includes a target for increasing the number of students studying through the medium of Welsh:

*The proportion of students in Welsh HEIs undertaking some element of their course through the medium of Welsh to increase to 7% by 2010.*³

The Strategy notes that in 1999/00 only 3% of all students at Welsh HEIs received some teaching through the medium of Welsh. In 2004/05 the proportion of students undertaking some element of their HE course through the medium of Welsh was 2.9%, a decline from 3.2% in 2003/04 and 3.4% in 2000/01.

In July 2004 the Steering Group for Welsh Medium Provision in Higher Education published a draft strategy on Welsh medium provision in the Higher Education sector.⁴ The strategy made a number of proposals for raising the level of Welsh medium provision. The proposals relate in particular to the areas of staff development and marketing and also propose the need for further research, including this study on the costs of Welsh medium provision and a study appraising the options for developing Welsh medium provision. HEFCW presented the strategy to the Minister for Education and Lifelong Learning in October 2004 and various aspects of the strategy are now being implemented with additional support from the Assembly Government through the HEFCW Reconfiguration and Collaboration Fund.

3.2 Level of provision

In this section we provide data that gives an indication of the current level of Welsh medium provision across the HEIs and by subject area. Modules have been categorised into subject areas using the Academic Subject Category

³ Welsh Assembly Government, March 2002, *Reaching Higher – Higher Education and the Learning Country – A Strategy for the Higher Education Sector in Wales*.

⁴ Steering Group for Welsh Medium Provision in Higher Education, July 2004, *Welsh Medium Provision in Higher Education – Draft Strategy*, HEFCW.

(ASC) coding.⁵ The data used is based on London Economics analysis of the HESA database.⁶

3.2.1 Analysis of Welsh medium modules

In Figure 3.1 we present, by HEI, the number of modules taught exclusively in English and those of which at least 25% is taught through the medium of Welsh (excluding Welsh language and literature modules).⁷

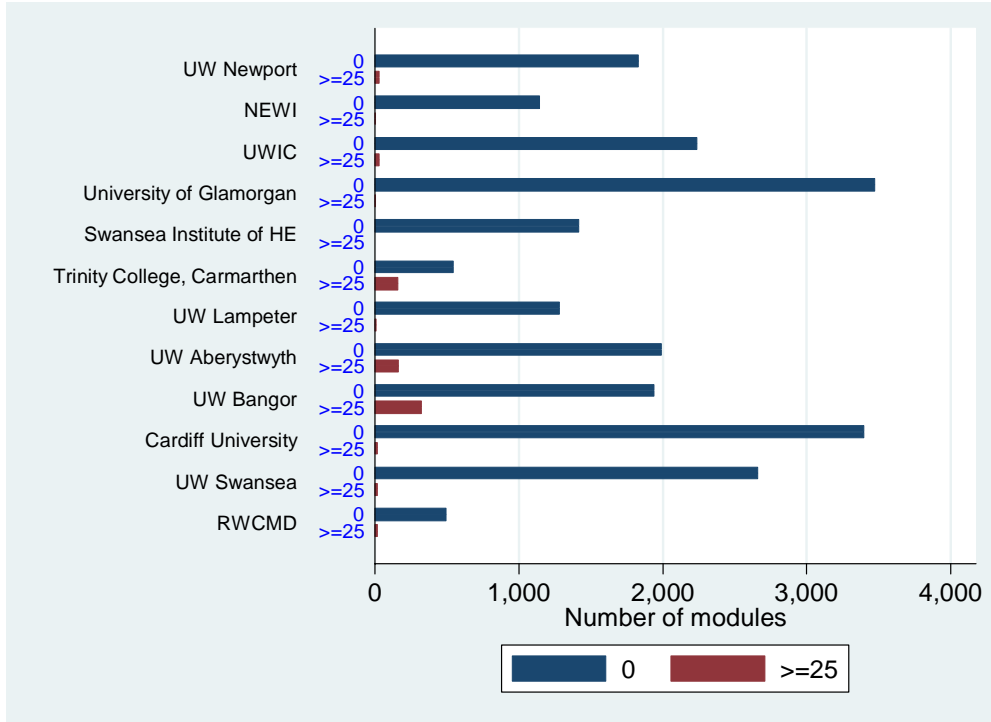
Welsh medium provision occurs primarily at UW Bangor with 328 modules, followed by Trinity College and UW Aberystwyth, with 159 and 164 modules, respectively. In each of the rest of the HEIs the number of modules taught through the medium of Welsh is below 35.

⁵ HEFCW Higher Education Students Early Statistics Survey 2005/06, http://194.81.48.132/FinanceAssurance_Docs/W0559HE_circ.pdf.

⁶ As provided by HEFCW for the academic year 2004/05. Data were refined by HEFCW in order to enable the merging of student and module records. In addition, missing fields or fields not relevant to Wales have been deleted.

⁷ The 25% threshold is used due to its relevance for the application of the Welsh medium premium in the funding formula.

Figure 3.1: Number of modules in English (blue) and where at least 25% is taught in Welsh (red) by HEI



Note: Excludes Welsh language and literature. Welsh medium provision defined as 25% of teaching.
 Source: HESA (2004/05) and LE calculations

To give a picture of the intensity of Welsh in the provision of education, Table 3.1 analyses the proportion of Welsh medium provision in each HEI by intervals of 25%. Most of the modules are being taught fully in English (22,377 or 96% of the modules offered by all universities). However, it is noticeable that 697 or 3% of modules are taught fully in Welsh. Finally, we observe that 43 modules contain between 25% and 49% Welsh medium teaching, and 66 between 50% and 99%. It is interesting to note that there are 36 modules being taught less than 25% through the medium of Welsh, which are therefore not eligible for Welsh medium funding.

Table 3.1: Number (percentage) of modules taught in different proportions of Welsh by HEI (2004/05).

HEI	% intensity of Welsh medium teaching						Total
	0	1-24	25-49	50-74	75-99	100	
UW Newport	1828 (98.23)	0 (0)	0 (0)	17 (0.91)	0 (0)	16 (0.86)	1861 (100)
NEWI	1145 (99.22)	0 (0)	7 (0.61)	0 (0)	0 (0)	2 (0.17)	1154 (100)
UWIC	2234 (98.50)	1 (0.04)	10 (0.44)	1 (0.04)	11 (0.49)	11 (0.49)	2268 (100)
University of Glamorgan	3478 (99.83)	0 (0)	0 (0)	0 (0)	0 (0)	6 (0.17)	3484 (100)
Swansea Institute of HE	1415 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1415 (100)
Trinity College , Carmarthen	532 (75.78)	11 (1.57)	11 (1.57)	4 (0.57)	0 (0)	144 (20.51)	702 (100)
UW Lampeter	1286 (99.08)	0 (0)	0 (0)	0 (0)	0 (0)	12 (0.92)	1298 (100)
UW Aberystwyth	1995 (92.4)	0 (0)	0 (0)	0 (0)	0 (0)	164 (7.60)	2159 (100)
UW Bangor	1936 (85.47)	1 (0.04)	2 (0.09)	16 (0.71)	3 (0.13)	307 (13.55)	2265 (100)
Cardiff University	3381 (98.89)	18 (0.53)	6 (0.18)	7 (0.20)	1 (0.03)	6 (0.18)	3419 (100)
UW Swansea	2660 (99.25)	0 (0)	0 (0)	4 (0.15)	0 (0)	16 (0.60)	2680 (100)
Royal Welsh College of Music and Drama	487 (94.75)	5 (0.97)	7 (1.36)	2 (0.39)	0 (0)	13 (2.53)	514 (100)
Total	22377 (96.37)	36 (0.16)	43 (0.19)	51 (0.22)	15 (0.06)	697 (3.00)	23219 (100)

Note: Excludes Welsh language and literature.

Source: HESA (2004/05) and LE calculations

When analysing the 36 modules being provided less than 25% in Welsh, we observe that these are mainly at Cardiff University, where 17 modules are being taught 5% in Welsh (see Table 3.2).

In addition, as many as five modules are very close to the threshold required to receive Welsh medium provision funding. Four modules are being provided with a proportion of 20% and one module is being provided at a proportion of 24.6%. These modules would benefit from the Welsh medium provision premium by slightly increasing the proportion of Welsh teaching.

Table 3.2: Number of modules with Welsh medium intensity 1-24%, by percentage intensity and HEI (2004/05).

HEI	% intensity of Welsh medium provision						
	5	8	10	15	16	20	24.6
University of Wales Institute, Cardiff	0	1	0	0	0	0	0
Trinity College, Carmarthen	1	0	3	5	0	2	0
University of Wales, Bangor	0	0	1	0	0	0	0
Cardiff University	17	0	1	0	0	0	0
Royal Welsh College of Music & Drama	1	0	0	0	1	2	1
Total	19	1	5	5	1	4	1

Source: HESA and LE calculations.

In Table 3.3 the number of modules provided in Welsh is presented by academic subject category (ASC). Most of the modules provided fully in Welsh are being offered in "Humanities" (199), followed by "Education" (171) "Art, Design and Performing Arts" (160).

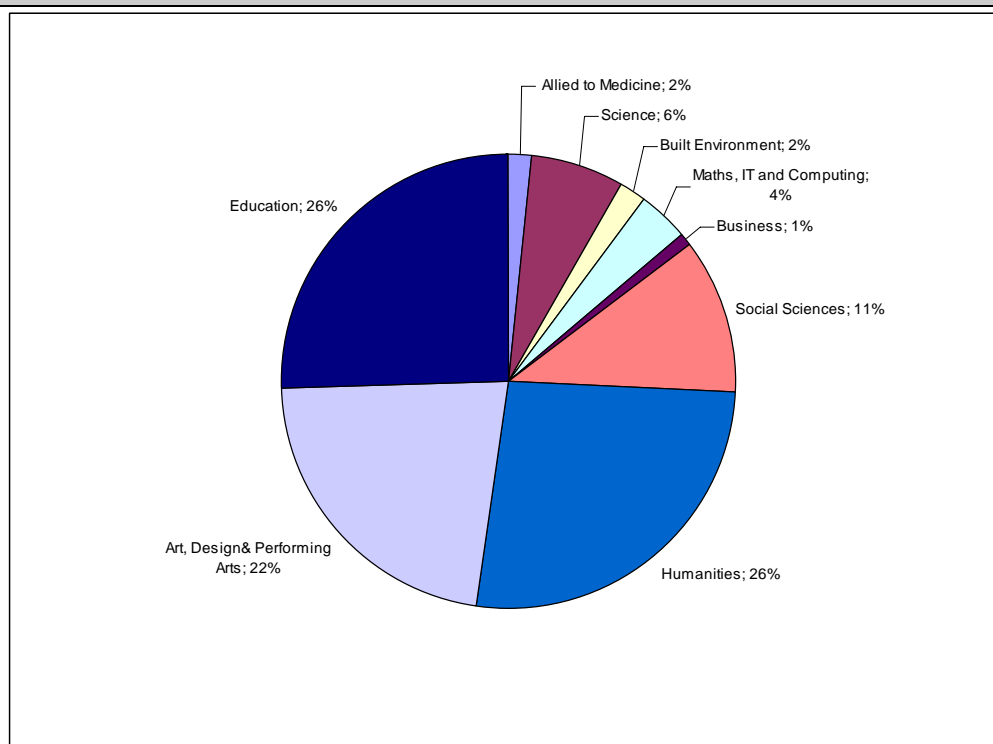
In these last two subject categories the modules being offered in Welsh are 10% and 6% of the total, respectively, which is noticeably more than the percentage of subjects offered in Welsh in "Humanities" and "Social Sciences" (about 3-4% each). In the rest of subject categories the percentage of modules being taught in Welsh is less than 1.5%.

Table 3.3: Number (percentage) of modules taught in Welsh by ASC (2004/05).

ASC Subject area	% intensity of Welsh medium teaching						Total
	0	1-24	25-49	50-74	75-99	100	
Clinical and Pre-clinical Subjects	132 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	132 (100)
Subjects & Professions Allied to Medicine	1348 (98.90)	0 (0)	0 (0)	0 (0)	0 (0)	15 (1.10)	1363 (100)
Science	3261 (98.37)	1 (0.03)	1 (0.03)	1 (0.03)	2 (0.06)	49 (1.48)	3315 (100)
Engineering and technology	1949 (99.95)	0 (0)	0 (0)	0 (0)	1 (0.05)	0 (0)	1950 (100)
Built Environment	545 (96.98)	15 (2.67)	0 (0)	0 (0)	0 (0)	2 (0.36)	562 (100)
Mathematical Sciences, IT and Computing	1728 (98.29)	7 (0.40)	1 (0.06)	0 (0)	2 (0.11)	20 (1.14)	1758 (100)
Business and Management	2365 (99.66)	0 (0)	0 (0)	0 (0)	0 (0)	8 (0.34)	2373 (100)
Social Sciences	2210 (95.96)	2 (0.09)	10 (0.43)	7 (0.30)	1 (0.04)	73 (3.17)	2303 (100)
Humanities	4946 (95.69)	1 (0.02)	8 (0.15)	11 (0.21)	4 (0.08)	199 (3.85)	5169 (100)
Art, Design and Performing Arts	2315 (92.56)	5 (0.20)	11 (0.44)	6 (0.24)	4 (0.16)	160 (6.40)	2501 (100)
Education	1567 (87.93)	5 (0.28)	12 (0.67)	26 (1.46)	1 (0.06)	171 (9.60)	1782 (100)
. (Missing observations)	11 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	11 (100)
Total	22377 (96.37)	36 (0.16)	43 (0.19)	51 (0.22)	15 (0.06)	697 (3.00)	23219 (100)

Note: Excludes Welsh language and literature.

Source: HESA and LE calculations.

Figure 3.2: Contribution to Welsh medium provision by ASC

Note: There is no Welsh medium provision in clinical and pre-clinical subjects, nor in engineering and technology.

Source: HESA (2004/05) and LE calculations

3.2.2 Analysis of number of enrolments per module taught in Welsh

Table 3.4 presents the percentage of enrolments (total student registrations per module) being taught in Welsh at different universities. Overall, over 98% of student enrolments are for English medium only modules (excluding Welsh language and literature modules). This leaves 1.45% of enrolments linked to modules with at least some element of Welsh medium teaching.⁸

It is noticeable that the shares of students in Welsh medium modules are unevenly distributed amongst universities: at Trinity College Carmarthen 16% of all student enrolments are for Welsh medium provision, compared to 5% at the UW Bangor, 2% at UW Aberystwyth, and less than 2% at the rest of universities.

⁸ This is consistent with the estimate that 2.9% of students were in receipt of some Welsh medium provision in 2004/05 because students enrol on more than one module. Hence the number of student enrolments is greater than the number of individual students. The 2.9% estimate and the Reaching Wider target also include Welsh language and literature, whereas our figures do not.

Table 3.4: Enrolments by intensity of Welsh medium teaching and HEI (2004/05)

HEI	% intensity of Welsh medium teaching						Total
	0	1-24	25-49	50-74	75-99	100	
UW Newport	98.98	0.00	0.00	0.81	0.00	0.21	100
NEWI	98.82	0.00	1.09	0.00	0.00	0.09	100
UWIC	99.43	0.01	0.10	0.03	0.32	0.11	100
University of Glamorgan	99.93	0.00	0.00	0.00	0.00	0.07	100
Swansea Institute of HE	100	0.00	0.00	0.00	0.00	0.00	100
Trinity College, Carmarthen	78.89	1.49	2.76	0.82	0.00	16.03	100
UW Lampeter	99.27	0.00	0.00	0.00	0.00	0.73	100
UW Aberystwyth	97.86	0.00	0.00	0.00	0.00	2.14	100
UW Bangor	94.13	0.02	0.02	0.77	0.01	5.06	100
Cardiff University	99.92	0.02	0.03	0.01	0.00	0.02	100
UW Swansea	99.65	0.00	0.00	0.03	0.00	0.32	100
Royal Welsh College of Music and Drama	97.80	0.69	0.30	0.22	0.00	0.99	100
Total	98.55	0.05	0.13	0.14	0.04	1.09	100

Source: HESA and LE calculations.

Welsh medium teaching is also unevenly distributed by subject areas, as Table 3.5 shows. Over 7% of total student enrolments in the "Education" subject category relate to Welsh medium teaching, with 2% and 2.7% in "Humanities" and "Art, Design and Performing Arts", respectively. Less than 1.5% of the total student enrolments relate to Welsh medium provision in the remaining subject categories.

Table 3.5: Enrolments by intensity of Welsh medium teaching and ASC (2004/05).

ASC Subject area	% intensity of Welsh medium teaching						Total
	0	1-24	25-49	50-74	75-99	100	
Clinical and Pre-clinical Subjects	100	0	0	0	0	0	100
Subjects & Professions Allied to Medicine	99.56	0	0	0	0	0.44	100
Science	99.65	0	0.01	0	0.04	0.30	100
Engineering and technology	100	0	0	0	0	0	100
Built Environment	99.78	0.19	0	0	0	0.03	100
Mathematical Sciences, IT and Computing	98.89	0.13	0	0	0.08	0.90	100
Business and Management	99.98	0	0	0	0	0.02	100
Social Sciences	98.65	0.01	0.39	0.13	0.03	0.79	100
Humanities	98.00	0	0.06	0.07	0.09	1.78	100
Art, Design and Performing Arts	97.26	0.05	0.08	0.03	0.05	2.53	100
Education	92.82	0.29	0.80	1.44	0.02	4.63	100
(Missing observations)	100	0	0	0	0	0	100
Total	98.55	0.05	0.13	0.14	0.04	1.09	100

Source: HESA and LE calculations.

4 Additional Cost of Delivering Welsh Medium Provision

4.1 Introduction

Three of the four objectives for the study relate to the costs of Welsh medium provision as follows:

- Determine the additional cost associated with delivering Welsh medium provision in a variety of circumstances over and above those which may legitimately be expected to be met through core funding;
- Examine whether it is possible to establish some benchmark costs for developing various kinds of new provision beyond what might be reasonably expected within core funding;
- Quantify the costs associated with delivering collaborative provision

The issues relating to each of these three objectives are discussed in this Chapter, with the focus of discussion being the first objective.

For the purposes of the analysis undertaken, we have taken core provision to be synonymous with provision that has both of the following characteristics:

- a) It is in one language where both staff and students are wholly fluent, and confident of their language abilities, in both the spoken and written language;
- b) A sufficient range of research and teaching materials is available in the language, with no requirements for any translation.

We believe that English medium only provision in Wales will always, or nearly always, have these characteristics whilst Welsh medium only provision will not normally have these characteristics, though it may do sometimes. Mixed English and Welsh provision will not have these characteristics.

This description of core provision does not reflect a view of what core provision should be, rather it is intended to provide a relatively clear and straightforward baseline for the assessment of additional costs.

4.2 Cost categories

Each student following a degree course is required to study a number of modules each year. Each module is allocated a credit level and students need to choose modules that provide them a sufficient number of credits to achieve their degrees.

In order for an HEI to provide a module a number of activities need to be undertaken and resources used. The module must be developed and course materials prepared. Decisions need to be taken about whether the module should be delivered given the HEI/faculty/department objectives and potential funding. An appropriate time in the timetable needs to be found, together with appropriate accommodation for delivering the module. This may be lecture halls, seminar rooms, laboratories etc. Finally, the module's availability needs to be communicated, thus incurring costs relating to the development of marketing materials or adapting web-sites, for example.

Whilst the module is delivered, it is provided by lecturing staff often supported by other staff (e.g. laboratory technicians, seminar leaders, tutors etc). Other resources such as light and heating are also consumed.

Preparation and continuing development of course materials is also likely to be undertaken. In-year assessments and exams need to be prepared and marked, and external examiners used. Students taking a module also make other use of resources in relation to their study for the module, such as library and computer resources.

The above description of resource use applies to both English medium and Welsh medium modules. However, we may find that there are additional costs associated with Welsh medium provision of a module. The potential for additional costs associated with Welsh medium provision is different depending on whether the whole module is provided through the medium of Welsh or whether the module is provided through both languages. In the latter case, the potential for additional costs depends on the format of provision.

In the Welsh FE sector research has been undertaken on a range of methods for provision of teaching in both languages. These include groups where both languages are used in the same class room for the main elements of teaching and classes/lectures which are held in one language (typically English) and then the students are split into language-based groups for further discussion etc. Our discussions with the HEIs suggest that their provision in both languages is more likely to involve provision of two separate modules - one for each language. Where a single module involves provision in both languages it is most likely to be of the latter type with lectures in English and then some tutorials/seminars in English and some in Welsh.

In this case there may be additional costs compared to 100% Welsh or English medium provision, if for example, an additional room and an additional member of staff needs to be found for additional classes to accommodate both

languages. The need for additional classes does depend on student numbers however (see example discussed at the end of Section 4.3.1). Where parallel modules are provided in English and Welsh then these costs may be more than double the costs of provision of the module in one language. This would be the case where the costs of 100% Welsh medium provision are greater than the costs of 100% English medium provision for example.

The cost categories, together with an indication of the potential for additional costs for Welsh medium provision, are summarised in Table 4.1 below.

Table 4.1: Potential additional Welsh medium costs by cost category

	Core provision	100% Welsh Medium	English & Welsh medium ⁹
Module Development	✓	✓	✓
Timetabling	✓		✓
Accommodation and associated costs	✓		✓
Lecturing time	✓		✓
Support staff time	✓		✓
Development of course materials	✓	✓	✓
Assessments/exams	✓	✓	✓

Note: Where we have left blanks, we would not normally expect there to be additional costs of Welsh medium provision, though there may be in some circumstances.

We will discuss each category in turn.

- Module development.** Before a module is offered then a decision needs to be taken about whether or not to offer the module and time needs to be spent preparing the structure and content of the module. For the purposes of this study we assume that there are no additional costs in relation to the decision-making process. There may be additional costs of course materials relating to translation of English medium materials, which may be more widely available, and/or the extra costs of preparing new Welsh medium materials.¹⁰ Translations might be undertaken by individual lecturers or they might be undertaken by central (departmental or institutional) translation units.

⁹ Both languages either provided separately as parallel modules or within the same module.

¹⁰ Appropriate English medium materials are more likely to be already available.

- **Timetabling and accommodation.** We assume that there are no additional costs for 100% Welsh medium modules relating to timetabling or to accommodation, ie these costs are the same for Welsh medium modules as they are for English medium modules. However, if Welsh medium modules are offered in parallel to English medium modules then there may be additional timetabling and accommodation costs arising from the need to offer a higher number of modules overall. Whether or not there are additional costs depends, in part, on whether or not there is vacant teaching accommodation available at times that fit the timetable. There may also be higher costs for single modules that include both Welsh and English medium elements.
- **Lecturing and support staff time.** This category relates to time spent teaching (and does not include time spent in preparing for lectures/classes). We assume that there is no need to spend additional teaching time on a 100% Welsh medium module compared to an English medium module. Note however, that where English and Welsh medium versions of the same module are offered this may increase the total amount of staff time spent teaching compared to the situation where the module is offered through only one language. There may also be greater use of teaching time by single modules that include both Welsh and English medium elements.
- **Course materials and resources.** For some Welsh medium modules there may be ongoing additional costs relating to course materials. These costs may be the costs of translating existing English medium material into Welsh or of producing new Welsh medium material (compared to the situation where there is already existing English medium material).
- **Assessment.** We assume that in some instances costs of preparing exams or assessment materials may be greater for Welsh medium modules if there is a need to translate English language material. We understand from our discussions with the HEIs that at some institutions, Welsh medium scripts are sometimes translated into English for external examination.

In addition to these costs, there may be other costs incurred by HEIs for services provided centrally (or sometimes by the faculty or department). The provision of these services may not vary directly with the number of modules and students.¹¹ There may be extra library related costs associated with Welsh medium provision if Welsh medium materials are more expensive or more time-consuming to find. Some HEIs also see the need to provide language support and training for both staff and students. There may also be

¹¹ Though in most cases there may be a threshold number of modules/students below which it would not be worth providing the service.

additional costs of recruitment for Welsh medium staff and in the marketing of Welsh medium courses to potential students.

4.3 Factors that influence costs

There are a wide range of factors that influence the costs of Welsh medium provision. In general the relationships between these factors and costs are not likely to be simple direct relationships - they are part of a complex web of inter-relationships. The discussion below aims to focus on the key factors and relationships. The main factors discussed are:

- Student numbers;
- Numbers of Welsh medium modules;
- Subject area;
- Other factors linked to the institution.

4.3.1 Student numbers

In our discussions with the HEIs, the main additional cost of Welsh medium provision that many referred to was the additional cost per student deriving from the fact that normally the numbers of students studying a Welsh medium module are significantly lower than numbers studying English medium modules. In other words, even if there are no extra costs of Welsh medium provision at the level of the module, the cost per student will still be greater for Welsh medium modules.

Table 4.2 below shows ratio of English to Welsh medium student numbers by institution (for modules which are 100% taught through Welsh). It suggests, for example, that the cost per student of a 100% Welsh medium module averages 3.5 times those of an English medium module, varying between 1.3 times at Trinity College and Lampeter to 7.9 times at Cardiff University.¹²

¹² This estimate assumes that all of the costs are invariant with the number of students on the module.

Table 4.2: Average enrolments by Welsh modules and HEI (2004/05).

HEI	E	W	E/W
UW, Newport	23.0	5.7	4.04
NEW Institute of HE	22.0	12.0	1.83
UW Institute, Cardiff	29.6	6.5	4.55
University of Glamorgan	24.7	9.5	2.60
Swansea Institute of HE	25.0	-	-
Trinity College, Carmarthen	20.1	15.1	1.33
UW, Lampeter	14.3	11.3	1.27
UW, Aberystwyth	30.3	8.0	3.79
UW, Bangor	21.9	7.4	2.96
Cardiff University	34.1	4.3	7.93
UW, Swansea	29.5	15.8	1.87
Royal Welsh College of Music and Drama	7.3	2.8	2.61
Average (whole sample)	26.0	11.3	2.29

Source: HESA (2004/05).

Table 4.3 shows similar figures, broken down by ASC. The English medium multiple varies between 1.3 for Mathematical Sciences, IT and Computing and 16.7 for Business Management.

Table 4.3: Average enrolments by Welsh modules and ASC (2004/05)

ASC	E	W	E/W
Clinical and Pre-clinical Subjects	29.1	-	-
Subjects & Professions Allied to Medicine	22.6	9.0	2.51
Science	33.3	6.8	4.90
Engineering and technology	23.7	-	-
Built Environment	21.7	1.5	14.47
Mathematical Sciences, IT and Computing	30.2	23.6	1.28
Business and Management	30.1	1.8	16.72
Social Sciences	33.3	8.1	4.11
Humanities	17.5	7.9	2.22
Art, Design and Performing Arts	19.1	7.2	2.65
Education	28.2	12.9	2.19
Average (Whole sample)	26.0	11.3	2.29

Source: HESA (2004/05).

The picture for modules taught through a mix of Welsh and English is harder to discern because the impact of economies of scale in student numbers depends on the teaching methods.

In some circumstances there may be no scale effects at all. For example, consider a module that is taught bilingually in the following format - lectures are in English, and students choose the language in which their tutorials take place. Since only 25% of the module has to be delivered in Welsh for the institution to claim the extra funding, this is likely to be quite a common arrangement. In this case, the smaller numbers of Welsh language students will only add to costs if tutorial groups are smaller. For example, consider a roll of 60 students - 45 English speakers, 15 Welsh speakers. If tutorial group sizes are 15 per class, there would be 3 English medium classes and 1 Welsh medium class, and no scale effects.

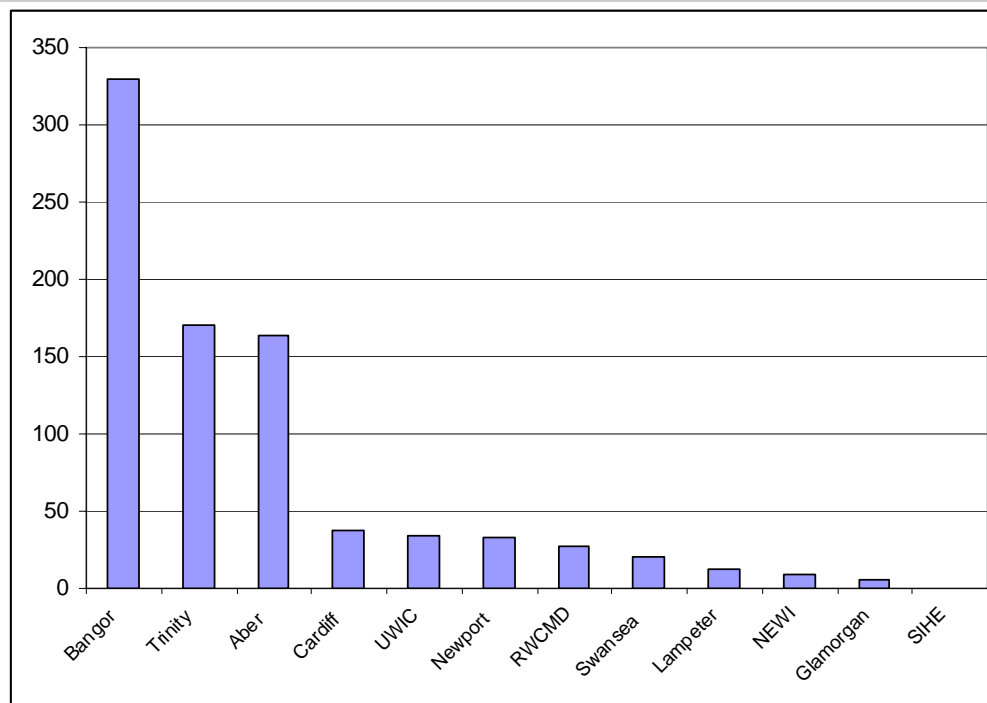
4.3.2 Number of Welsh medium modules

Since some of the costs of Welsh medium provision are incurred at the level of the Institution, there may be economies of scale in terms of the number of Welsh medium modules provided by each Institution. In other words the total costs of Welsh medium provision per module may be lower for Institutions with a higher number of Welsh medium modules. This is because some of the costs of centrally provided services such as translation, language support or library services may not vary significantly with the number of Welsh medium modules.

It may also be the case that economies of scale at the level of the department (or faculty, or school) are important. This might be the case, for example, if some of the central services outlined above were provided at a faculty level rather than centrally within the Institution. However, our interviews with the HEIs have suggested that generally these central services are provided at the level of the Institution and that little of this nature is provided at departmental level. Nevertheless there are other factors which may be relevant at a departmental or faculty/school level including the development of subject-based course materials and vocabulary.

Figure 4.6 shows the number of Welsh medium modules provided by each HEI in 2004/05.

Figure 4.1: Number of Welsh medium modules (1-100%) by HEI (2004/05)



Source: HESA (2004/05) and LE calculations

It can be seen that Bangor, Trinity College and Aberystwyth offer significantly more Welsh medium modules than the other nine HEIs. In fact, Bangor alone provides significantly more Welsh medium modules than the other nine HEIs do between them. This suggests that Bangor, Trinity College and Aberystwyth may be able to benefit from some economies of scale. However the extent to which this is important depends on the size of the costs of centrally provided services and the interaction of this scale effect with other cost drivers.

4.3.3 Academic Subject Category (ASC)

HEIs offer modules across a wide range of ASCs. Teaching methods and facilities, and hence costs, may vary considerably across ASCs. Some modules will rely mainly on lectures, perhaps combined with tutorials/seminars; some will involve significant amounts of laboratory work; and some will also involve fieldwork. Teaching time inputs as well as the costs of physical inputs, such as accommodation and equipment will vary across the ASCs. To some extent the credit rating, mode (full time, part time etc) and level (undergraduate, postgraduate taught etc) of the module may also affect these costs.

Core funding also varies by ASC, with the aim of reflecting these cost differences. In the funding formula, variations in core funding across the ASCs are reflected by differences in the standard unit of resource for each ASC – see Table 4.4. Since the Welsh medium premium is calculated as a percentage uplift on the core funding provision, any differences in core funding between ASCs are translated into differences in the Welsh medium uplift. Medical and dentistry modules, for example, which receive a relatively high level of core funding, will also receive a higher Welsh medium premium (in cash rather than percentage terms).

Table 4.4: ASCs and Standard Units of Resource for 2005/06

Medical and dentistry – non clinical quota (58.91)	Subjects and Professions Allied to Medicine (43.83)	Built Environment (44.28)	Social Sciences (26.71)	Education – Initial Teaching Training QTS (44.36)
Medical and dentistry – quota (115.46)	Science (48.47)	Mathematical Sciences, IT & Computing (40.33)	Humanities (33.80)	Education – Initial Teacher Training Non-QTS – Bed Primary Year 4 (22.18)
Medical and dentistry – non-quota (58.49)	Engineering and Technology (53.35)	Business and Management (28.87)	Art, Design and Performing Arts (39.80)	Education: Non-Initial Teacher Training (39.08)

Note: Figures in parentheses are the standard unit of resource for each ASC in £ per credit value.

Source: HEFCW

This raises the question of whether the additional costs of Welsh medium provision also vary across the ASCs in the same way as the core costs that are not directly related to Welsh medium costs. It has not been suggested to us that there are any subject areas with intrinsically higher costs of Welsh medium provision. However, there are likely to be higher economies of scale for some subject areas, such as medicine, engineering and science since they require a greater investment in capital in terms of equipment and machinery and in accommodation, such as laboratories. This has an impact on the costs of Welsh medium provision where the number of modules and class sizes are smaller for Welsh medium modules. This suggests that an additional Welsh medium premium (in cash terms) that is available for these types of module may be justified.

Table 4.5 shows the availability of Welsh medium modules by subject area (ASC) and HEI. Three quarters of Welsh medium modules are provided in just three areas: “Humanities”; “Art, design and performing arts”; and “Education”.

In our interviews with the HEIs, it was often suggested that Welsh medium modules were frequently provided in particular subject areas, just because there happened to be a member of staff teaching in that area who was both able and sufficiently enthusiastic to organise a Welsh medium module. The data in Table 4.5 suggests however that there is more provision in subject areas which appear to be cheaper to provide to smaller classes (because there are fewer fixed costs).

Table 4.5: Number of Welsh medium modules (average number of enrolments) by HEI and subject area (2004/05).

ASC*	HEI												
	UW Newp	NEW I	UW I, Cardiff	Univ Glam	Swansea Inst	Trinity	UW Lamp	UW Aber	UW Bangor	Cardiff Uni	UW Swan	RWCMD	Total (Avg)
CPL													0 (.)
ALM									15 (9.0)				15 (9.0)
SCI			8 (9.6)			5 (6.8)		23 (9.1)	16 (3.9)	2 (1.0)			54 (6.1)
E&T										1 (1.0)			1 (1.0)
BE									2 (1.5)	15 (1.5)			17 (1.5)
MIC			5 (11.2)			17 (18.3)		1 (1.0)	3 (7.0)		4 (48.8)		30 (17.3)
BM									8 (1.8)				8 (1.8)
SS		9 (33.4)	1 (21.0)	2 (5.0)				32 (9.0)	44 (8.4)	5 (3.8)			93 (13.4)
HU			9 (12.9)	4 (11.8)		22 (8.9)	12 (11.3)	57 (6.7)	96 (8.1)	8 (5.4)	15 (4.7)		223 (8.7)
ADP			5 (9.2)			45 (9.9)		44 (9.0)	58 (4.7)	7 (1.4)		27 (3.0)	186 (6.2)
ED	33 (13.1)		6 (10.0)			81 (23.2)		7 (6.1)	87 (11.3)		1 (8.0)		215 (12.0)
Total (Avg)	33 (13.1)	9 (33.4)	34 (11.1)	6 (9.5)	0 (.)	170 (16.9)	12 (11.3)	164 (8.0)	329 (8.0)	38 (2.6)	20 (13.7)	27 (3.0)	842 (10.2)

Note: ASC codes are abbreviated as follows: Clinical and pre-clinical subjects (CPL), Subjects and Professions Allied to Medicine (ALM), Science (SCI), Engineering and Technology (E&T), Built Environment (BE), Mathematical sciences, IT & Computing (MIC), Business and Management (BM), Social Sciences (SS), Humanities (HU), Art, Design and Performing Arts (ADP), Education (ED). Excludes Welsh language and literature. Blank cells equivalent to zeros.

Source: HESA (2004/05) and LE calculations.

4.3.4 Institution

There are a number of other factors, that we have characterised as being linked to each Institution, which have the potential to influence the costs of Welsh medium provision.

Some of these factors are related to the location of the Institution. They include:

- **Labour market conditions.** Those HEIs for whom research is an important part of their activities have told us that the market for research staff (who are often also teaching staff) is an international market. The costs of recruiting and retaining these staff is unlikely to be affected by local labour market conditions. Many other staff, including administrative staff, are recruited locally however and so recruitment and retention costs may vary by Institution. The more flexibility with regard to employment contracts that individual HEIs have, the more likely that this factor is to have an influence on costs.
- **Availability of space.** For many HEIs the provision of Welsh medium modules will mean the provision of additional modules (over and above existing English medium provision). Where this is the case more accommodation will be needed for the higher number of modules. This may be additional lecture rooms, seminar rooms, laboratories etc. Whether or not this addition of Welsh medium provision has a direct impact on costs will depend on a number of factors including the availability of spare accommodation capacity that matches the additional need, both in terms of accommodation type and in terms of the timetable. Where spare capacity is not available, the additional cost will depend on whether the Welsh medium provision displaces other forms of provision or whether additional accommodation is purchased or leased.
- **Distance from other HEIs.** The HEI's distance from other HEIs may influence the extent to which it can carry out certain types of collaborative provision that involve the movement of students or lecturers between Institutions. The extent of collaborative provision of this kind is very low at present and so this is not likely to be a significant cost driver.

The per student costs of Welsh medium provision are influenced by the ability of each HEI to attract both students able and willing to learn through the medium of Welsh and teaching staff able and willing to teach through the medium of Welsh. The factors that will influence these decisions are complex, but the HEIs indicated to us that some of the relevant students and lecturers are attracted to HEIs that can offer a Welsh atmosphere – both because it is in a Welsh speaking locality and because the Institution itself uses the medium of Welsh internally. This would provide a natural cost advantage to HEIs in some parts of Wales, though in order to create a Welsh atmosphere within the

Institution significant costs need to be incurred – eg translation costs and perhaps training costs.

The three HEIs with the highest level of Welsh medium provision – Bangor, Aberystwyth and Trinity College – are all based in areas where the Welsh language is relatively strong and they all undertake a significant part of their internal business through the medium of Welsh.¹³ It is important not to overemphasise these factors however. Even in Aberystwyth, fewer than 30% of students are from Wales, and of these about half are Welsh speakers. Many HEIs emphasised to us that a high proportion of Welsh speakers were not sufficiently confident in their Welsh language abilities, particularly in relation to written Welsh, to undertake third level education through the medium of Welsh. This either leads to a smaller pool of potential Welsh medium students or means that costs need to be incurred in order to improve their confidence, perhaps through some form of language support. Providing modules with a limited element of Welsh was also mentioned as suitable for these students.

4.4 Cost estimates based on survey responses

4.4.1 Introduction to the survey

A questionnaire was prepared to gather information about the costs of Welsh medium provision. Since the HEIs do not have access to much of the right kind of cost data internally, the questionnaire aimed to focus on questions about the volume of resources used in providing Welsh medium modules and to ask questions about the cost of those resources. The main resource in question is staff time (time spent teaching and time spent preparing for lectures) and so the relevant costs relate to wages.

Slightly different questions were developed for English medium modules and for Welsh medium modules. Information about English medium modules was gathered to provide a point of comparison with data on Welsh medium modules. Further questions were also asked about the costs of services that might be centrally provided, such as library resources and translation facilities. Copies of the English language and Welsh language versions of the questionnaire are included at Annex 5.

We asked for our questionnaire to be completed for 329 modules in total – 169 Welsh medium modules (these include modules that are mixed English and Welsh medium) and 160 English medium modules. The size of the overall sample was based on what we thought it would be reasonable for the HEIs to provide, in the time available, following discussions with them at the

¹³ Cardiff University was also mentioned in our interviews with HEIs as an Institution that might have an advantage in attracting Welsh speaking students and staff – in this case because of its attractiveness as a city and as the capital of Wales.

interviews. Our sample represents about 20% of Welsh medium modules, but less than 1% of English medium modules.

We aimed to include in the sample modules from the range of academic subject areas available at each HEI and we also focussed in particular on modules where there appeared to be Welsh medium and English medium equivalents of the same module. We also tried to include modules with a range of different class sizes and credit values.

Most HEIs indicated a willingness to complete the questionnaires and many had helpful suggestions when we discussed the draft questionnaire with them. After the questionnaire was issued, several indicated concerns about the feasibility of meeting the deadline and asked for clarity on various points. It was clear that respondents found it generally difficult to provide the information requested and in particular to estimate the amount of time spent preparing for lectures. This may reflect the gap between the revenue based structure of HEI accounting systems and the cost focus of this study.

4.4.2 Analysis of the survey

Cost information was gathered through a questionnaire issued to each of the HEIs. The number of questionnaires issued, and the number of usable responses received, for each HEI are shown in Table 4.6 below.

Table 4.6: Number of questionnaires sent and received

HEI	Sent	Received (Usable records)
UW Newport	26	7
NEWI	30	22
UWIC	23	0
University of Glamorgan	21	8
Swansea Institute of HE	15	0
Trinity College, Carmarthen	25	13
UW Lampeter	21	12
UW Aberystwyth	36	29
UW Bangor	45	13
Cardiff University	31	18
UW Swansea	27	27
Royal Welsh College of Music and Drama	29	0
Total	329	149

Note: Excludes responses with missing records in teaching/preparation time, number of students, or number of credits. Also excludes observations with coding errors and 2 on-line modules.

Data verification

Before analysing the data, a thorough process of checking was undertaken to verify the figures. The responses were checked for consistency of units, and against each other to ensure that the answers were plausible. In a few cases, respondents had misunderstood the questions, and units needed to be corrected manually.¹⁴

In instances where discrepancies were found, or we were uncertain about the figures, respondents were contacted to confirm the answers that they had given, and corrections made to the dataset. In other cases where no plausible explanation could be found, records were deleted from the sample.

Descriptive analysis

Using data from responses to the survey, Table 4.7 below shows the number of modules and their average enrolments by institution and Welsh medium provision intensity (in four categories). There are few modules that are provided in both languages. This is because in general there are relatively few modules that provide education bilingually (see Table 3.1) and because the response rate among those modules was low. Our sample contains 21 modules being provided bilingually.

Table 4.7 also shows that the average number of students per module is much lower in Welsh medium modules than in English medium modules.¹⁵

¹⁴ For example a figure for total preparation time was often given, rather than a figure for preparation time per hour of lecture.

¹⁵ Estimates of student numbers are based on enrolments not full time equivalents (FTEs). We received very few responses that provided data on FTEs.

**Table 4.7: Number of modules by HEI and Welsh medium intensity
(average number of students in parentheses)**

HEI	% of course taught in Welsh				Total
	0	1-49	50-99	100	
Cardiff University	7 (48)	3 (92)	2 (16)	6 (37)	18 (48)
UW Lampeter	3 (18)			9 (16)	12 (17)
NEWI	20 (43)			2 (12)	22 (28)
UW Newport			7 (19)		7 (19)
Trinity College	6 (28)		1 (20)	6 (21)	13 (23)
University of Glamorgan	6 (27)			2 (2)	8 (14)
UW Aberystwyth	11 (73)	4 (10)		14 (11)	29 (31)
UW Bangor		4 (37)		9 (12)	13 (25)
UW Swansea	13 (56)			14 (21)	27 (38)
Total	66 (47)	11 (42)	10 (19)	62 (17)	149 (31)

Source: London Economics survey (2006).

Table 4.8 below shows the number of modules in the sample for each HEI by the length of time the module has been running and Welsh medium intensity. There are no major differences between English only or Welsh only provision, except in the 1-2 year range, where there are more Welsh medium modules, and in the 6-10 year range, where there are more English medium modules.

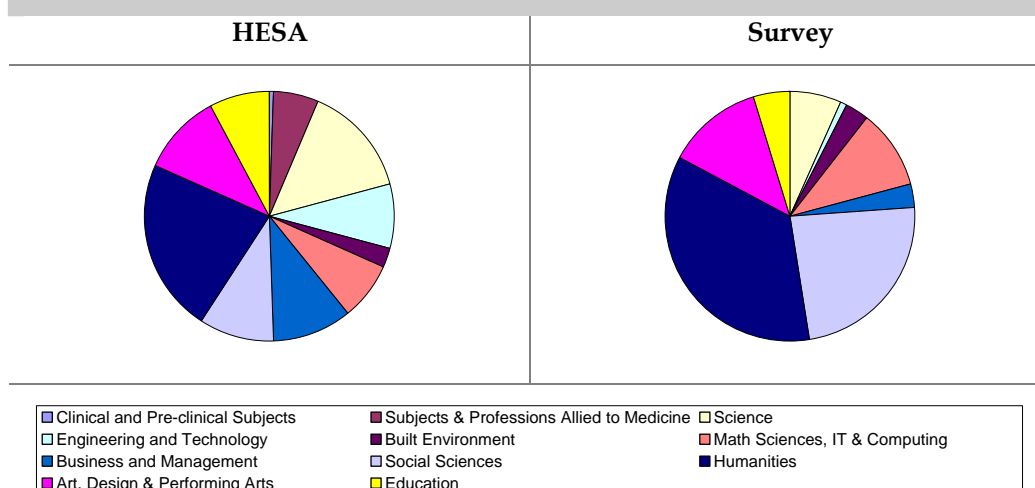
**Table 4.8: Module age and Welsh medium intensity.
Number of modules (and percentage)**

No. of years module has been taught	% of course taught in Welsh				Total
	0	1-49	50-99	100	
1-2 years	7 (10.6)	6 (54.5)		15 (24.2)	28 (18.8)
3-5 years	23 (34.8)	3 (27.3)	2 (20)	21 (33.9)	49 (32.9)
6-10 years	25 (37.9)		8 (80)	15 (24.2)	48 (32.2)
>10 years	4 (6.1)			4 (6.5)	8 (5.4)
Not known	7 (10.6)	2 (18.2)		7 (11.3)	16 (10.7)
Total	66 (100)	11 (100)	10 (100)	62 (100)	149 (100)

Source: London Economics survey (2006).

The HESA data (see Table 3.3) indicates that the level of Welsh medium provision differs markedly between ASC. In order to achieve as representative a sample as possible, we surveyed HEIs across a broad range of subject areas. However, most of the responses were in “Social Sciences” and “Humanities” (see Figure 4.2 for a comparison of our sample with HESA, and Table 4.9 for details of the survey data).

Figure 4.2: Comparison of the composition of the HESA database and survey data by ASC



Source: HESA (2004/05), London Economics survey (2006).

**Table 4.9: Module by ASC and Welsh medium intensity.
Number (and percentage)**

ASC	% of course taught in Welsh				Total
	0	1-49	50-99	100	
Science	5 (7.6)			2 (3.2)	7 (4.7)
Engineering and Technology	1 (1.5)				1 (0.7)
Built Environment	3 (4.5)				3 (2)
Math Sciences, IT & Computing	8 (12.1)			3 (4.8)	11 (7.4)
Business and Management	2 (3)			1 (1.6)	3 (2)
Social Sciences	12 (18.2)	6 (54.5)		7 (11.3)	25 (16.8)
Humanities	17 (25.8)			20 (32.3)	37 (24.8)
Art, Design & Performing Arts	7 (10.6)	1 (9.1)	1 (10)	4 (6.5)	13 (8.7)
Education	4 (6.1)			1 (1.6)	5 (3.4)
Missing values	7 (10.6)	4 (36.4)	9 (90)	24 (38.7)	44 (29.5)
Total	66 (100)	11 (100)	10 (100)	62 (100)	149 (100)

Source: London Economics survey (2006).

4.4.3 The measure of costs

Our measure of cost has been based on teaching and preparation time for each of the modules.

Teaching and preparation

Teaching time includes the number of hours delivered for the module in:

- “Lectures”;
- “Tutorials/small group session (including one-to-one)”; and
- “Laboratory or other supervised time”.

The questionnaire also included an option for “Other” types of teaching. The answers to this question were mainly “on-line teaching”, “workshops” and “placements”.

For each English and Welsh module the total teaching time (*TTT*) will be calculated as follows:

$$TTT = \sum t_j$$

where t_j = time in hours for each of j teaching categories

and $j = \{\text{Lectures, Tutorials, Laboratory, Other}\}$.

Preparation time includes the hours spent in preparing teaching materials, (including translation) for each of the categories of teaching and is measured in hours per teaching session. In addition, preparation time also included the hours spent in “Marking and assessment for the whole module (per student)” and “Preparing a new or revised module (only if the module is a new one or has been substantially revised)”.

The total preparation time is computed by multiplying the time spent in preparation of teaching materials (p_j) by the hours (t_j) of each of j the teaching categories, and adding the time spent in marking and assessment (m) multiplied by the number of students in the module (n), and the time in preparing and revising the module (r). So, for each English and Welsh medium module the total preparation time (*TPT*) will be calculated as follows:

$$TPT = \sum p_j * t_j + m * n + r$$

Therefore, for each English and Welsh module we have a measure of total time (*TT*) (including teaching, preparation and assessment and time taken to prepare new modules) that can be computed as follows:

$$TT = TTT + TPT.$$

Staff costs

There is little or no difference in the average hourly staff costs of Welsh and English medium provision for HEIs that provided responses. Similarly, no differences in the cost of recruitment of teaching staff have been found. For the purpose of our analysis we have assumed that the average hourly costs of English and Welsh staff is equal to £30.¹⁶

When asked about the particular difficulties of recruiting staff to teach in Welsh, a recurring theme was that there are no difficulties at present, but that this situation is changing, and problems are expected in the future.¹⁷ To a large extent this was echoed in our interviews with stakeholders.

¹⁶ The small number of responses to this question that we received averaged £33.21/hour.

¹⁷ Other examples of difficulties mentioned were “relevant expertise” (regardless of language), and having to “rely on part-time staff members from other institutions”.

Other costs

There are a number of other potential additional costs of Welsh medium provision that we have not been able to incorporate directly into our analysis. In our questionnaire for HEIs we also asked about the costs of providing support services, such as Welsh medium library services, teaching support, translation, and assessment and exam marking. Very few respondents provided an answer to this question, and the few responses varied considerably. Some said that there were no such costs, others suggested high values for these costs.¹⁸

A number of institutions also cited other costs of providing Welsh medium higher education, such as “purchasing books” and “renting additional library resources”, and “computer software” costs. A number of universities also noted the scarcity of Welsh medium resources.

We note that some modules are taught bilingually in both the English and Welsh languages. In these situations the additional cost of Welsh medium provision may depend on the additional staff members that are required to teach the Welsh share of the course and running parallel sessions that would not be required if the course was taught in English only.

Analysis of the HESA database suggests that 0.63% of modules are taught in this way. The nature of these teaching arrangements meant that it was difficult to disentangle the different cost components, and these modules have been excluded from our main analysis.¹⁹

4.4.4 Additional costs of Welsh medium modules²⁰

Calculation of the average costs across the sample

Table 4.10 below compares the costs of English and Welsh medium provision per module, per student, and per student and credit for all survey responses. The calculations are presented as median and mean costs.²¹

The costs per module for English medium modules are higher than the costs per module for Welsh medium modules. This reflects the higher number of students in English modules. To control for this we consider the cost per

¹⁸ In some cases only small or no additional costs were recorded, whereas in one HEI as much as £135,000, £825,000, £460,000, £8,000 is spent annually on library, teaching support, translation and assessment and examination arrangements. Another HEI provided an estimate of £50-60 per-module for Welsh language technical support, and for library material.

¹⁹ See Section 4.4.5, however, for an assessment of avoidable costs using the bilingual modules.

²⁰ “Seicoleg Trw’y Gymraeg” at Bangor has been deleted from the subsequent analysis due to an outlying value in preparation time.

²¹ The median is less sensitive to outlying values than the average. The mean has been calculated on a reduced sample excluding outlying observations.

student and observe that the cost per student of Welsh medium provision is 61% higher than the cost per student of English medium provision.

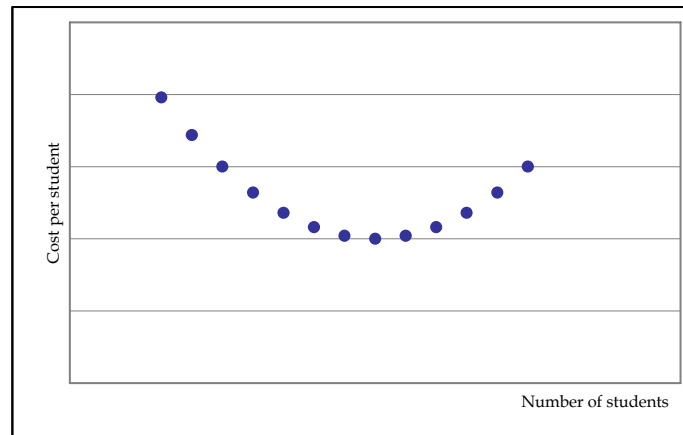
Finally, differences in costs can also be due to comparing modules with different credits. The cost of Welsh medium provision per student and per credit is 13.5% higher than the English medium cost.

Table 4.10: Cost of English and Welsh medium provision overall sample. Medians and Means (in parenthesis).

	E (£)	W (£)	(W - E) (£)	(W/E*100)
Per module	4,935 (11,092)	3,960 (5,425)	-975 (-5,667)	80.2 (48.9)
Per student	231 (413)	371 (567)	140 (153)	160.5 (137.1)
Per student per credit	16.6 (29.5)	18.8 (34.6)	2.2 (5.2)	113.5 (117.6)

Note: Medians are computed for overall sample. Means are computed on a sample without 4 outliers.
Source: *London Economics survey (2006)*.

Where there are costs that are fixed at the level of the module, we would expect average costs per student to decline as the number of students on the module increases. This is known as economies of scale. With very high numbers of students on a module it is possible that average costs per student would begin to rise again as, for example, more costs are incurred in accommodating students. This would give rise to a U-shaped relationship between cost per student and the number of students as shown in Figure 4.3.

Figure 4.3: Expected relationship between cost per student and module size

In practice, the relationship between cost per student and the number of students is more complex than this and the shape of the average cost curve may not be so regular. This is because there are different limits on the numbers of students that can attend lectures and tutorials. The example in the box below provides an illustration and shows why the costs per student may increase with student numbers over some ranges.

Shape of the Cost Curve in Practice - An Example

A module uses a lecture theatre with a capacity of 200 students, and the maximum size of tutorials (set for pedagogical reasons) is 12 students. Each student will receive 10 lectures and 10 tutorials on the module.

Each one hour lecture involves two hours of preparation in addition to the hour of delivery; and each one hour tutorial involves one hour of preparation in addition to the hour of delivery.

In addition to teaching time, each student's work is assessed at a cost of one hour per student. Each hour costs £30.

The above assumptions imply that the average costs associated with the module will be given by the costs of assessment, lectures, and tutorials divided by the roll, that is:

$$AC = \{30x + 900[1+\text{int}(x/201)] + 600[1+\text{int}(x/13)]\}/x$$

where x denotes the number of students on the module.

The table below shows the pattern of average costs for different roll sizes.

Roll	Average Costs (£)
3	530
6	280
9	197
12	155
15	170
18	147
21	130
24	118
25	114
50	96
75	90
100	87
200	83
205	84

It is readily observed that the average cost, while generally declining in roll, increases over some intervals.

To examine the actual relationship between cost and module size we look at the per student per credit cost distribution for English and Welsh medium modules by different module size bands. Module size is measured by the number of students enrolled. This analysis is illustrated in Table 4.11.

For module sizes above 11 enrolments there is very little difference between the estimated costs for English and Welsh medium modules. For modules with 1-5 enrolments the median costs of Welsh medium provision are slightly

higher than the costs of English medium provision. For modules with 6 - 10 enrolments, the estimated cost of English medium modules is significantly higher. This unexpected result cannot be attributed to different counts in the sizes categories for English and Welsh medium modules, as they are similar for both types of modules. There is a tendency for the English medium modules in this band to be more science based than the Welsh medium modules. This may be one contributory factor. Our previous example may also contribute to an explanation for the higher costs of English medium provision in this band.

Table 4.11: Cost of English and Welsh medium provision by module size (enrolments). Medians and Means (in parentheses).

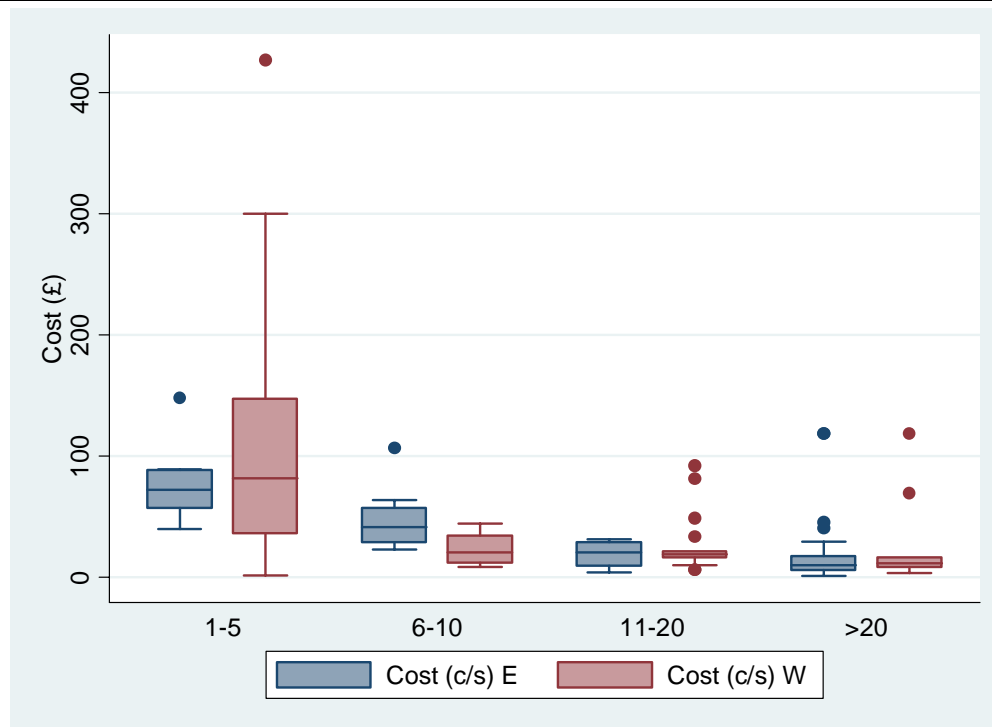
No. of enrolments	E (£)	W (£)	(W - E) (£)	(W/E*100)
1-5	72 (76.6)	81.8 (64.5)	9.8 (-12.1)	113.5 (84.2)
6-10	41.1 (47.8)	20.6 (23.4)	-20.5 (-24.4)	50.2 (48.9)
11-20	20.2 (19)	18.8 (25.5)	-1.5 (6.4)	92.7 (133.7)
>20	10.2 (17.6)	11.3 (25.5)	1.1 (8)	111 (145.3)

Note: Costs are calculated per student and per credit. Medians are computed for overall sample. Means are computed on a sample without 4 outliers.

Source: London Economics survey (2006).

Figure 4.4 provides more information about the distributions of modules in each of the size bands in Table 4.11. The horizontal lines within the shaded boxes represent the median values and the boxes are the inter-quartile ranges (IQR) - the 25% of observations on each side of the median. The finer lines represent the ranges which include observations within 1.5 times the IQR, and the dots represent observations that lie outside these ranges.

Figure 4.4: Cost of English and Welsh medium provision (per student per credit) by module size



Note: Costs are measured per student per credit. Size is measured by student numbers.

An important limitation with this analysis is that when comparing the modules at different size categories it is possible that modules are only equivalent by size but are very dissimilar in other respects (such as ASC, HEI where is being taught, ...).

Average costs of paired modules

To be able to control for all these other characteristics we undertake an analysis of a sample of matched pairs of English and Welsh modules. In this section we analyse pairs of English and Welsh modules that are necessarily exactly the same (in terms of ASC, university, credits,...) and differ merely in the number of enrolments and the language in which they are taught.

The data provided by the questionnaire allow us to undertake this analysis on 34 modules, which comprise 17 pairs of modules from four HEIs. As above, medians and means are calculated.²²

²² Three outliers have been eliminated from the calculation of the means on the basis of extreme values: *Practical Musicianship I* at Cardiff, and *Francophone African Literature and Memories of War in 20th Century French Literature* at UW Swansea.

The costs of English and Welsh medium provision for pairs of English and Welsh versions of the same module are shown in Table 4.12. As in Table 3.3 above, we note that when we consider a module as a whole, English medium provision is more expensive than Welsh medium provision. When controlling for student numbers and credits, Welsh medium provision has an additional cost per student over English of 25%.

Table 4.12: Cost of English and Welsh medium provision paired modules. Medians and Means (in parenthesis)

	E (£)	W (£)	(W - E) (£)	(W/E*100)
Per module	8,505 (10,692)	3,660 (4,085)	-4,845 (-6,608)	43 (38.2)
Per student	222 (221)	274 (398)	52 (178)	123.5 (180.6)
Per student per credit	19.8 (18.5)	24.8 (30.2)	5.0 (11.7)	125.2 (163.6)

Note: Medians are computed for overall sample. Means are computed on a sample without 3 outliers. Analysis based on 17 pairs of modules (34 modules in total), from four HEIs.

Source: *London Economics survey (2006)*.

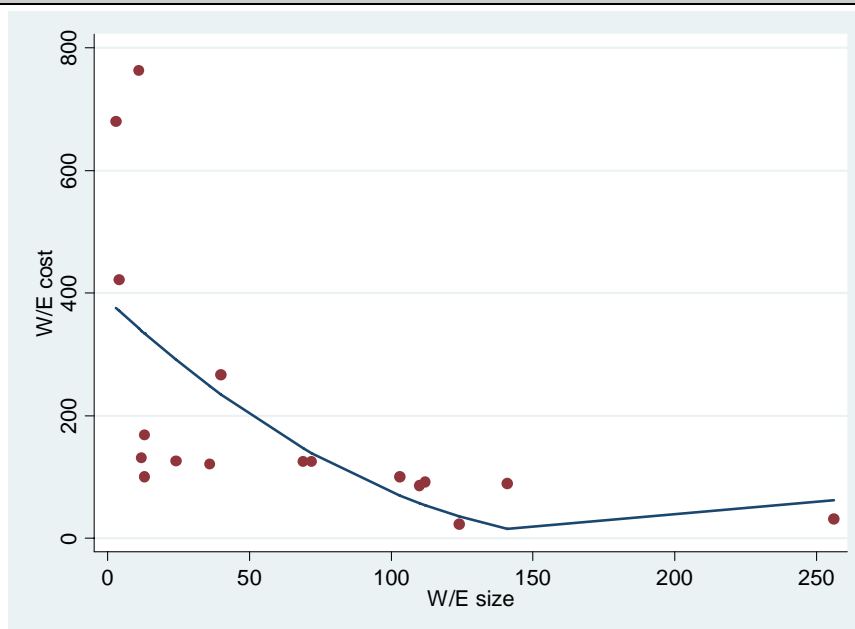
Again, an important point that we need to establish is whether the higher costs observed for Welsh medium provision are due to higher costs of the provision of Welsh or costs due to smaller classes (and cannot benefit from economies of scale). In other words we would seek an answer to the following question: what would be the costs of Welsh medium provision *if the module was being provided to a similar number of students to those participating in English modules?*

To answer this question we have compared the paired-modules results with module sizes. Looking at the ratios of Welsh to English costs of provision and comparing them with the ratios of Welsh to English module size we are able to tell how much higher costs are due to a higher number of students.

This is shown in Figure 4.5. Not surprisingly the relationship is downward sloping, meaning that those Welsh modules with lower multiples of students also imply lower multiples of costs (compared to English). It is interesting to note that for modules of similar sizes (a student ratio of around 100 means that the Welsh and English modules have similar numbers of students) the ratio of costs is also similar (costs ratios are also around 100).

Again the analysis suggests that the costs of Welsh and English provision are similar and the differences are mainly due to module size, which we measure by the number of student enrolments.

Figure 4.5: Cost of English and Welsh medium provision ratio by module size ratio (enrolments).



Source: London Economics.

Average costs based on regression analysis

So far we have seen that module size is a major driver of costs and that in our sample no significant differences can be found between Welsh and English provision.

As a further check we now use a regression model to try to elucidate the effects of size on module costs and whether statistically significant differences are found between Welsh and English modules.

We seek to explain the costs of education based on module size and a dichotomous variable to differentiate Welsh from English modules. For each module i we posit the following model:

$$\ln(c_i) = \alpha + \beta \ln(n_i) + \gamma [\ln(n_i)]^2 + \delta w_i + \varepsilon_i,$$

where $\ln(c_i)$ are the per student per credit costs for module i (in logarithms),

n_i is the size of the module, in terms of numbers of students enrolled,

w_i is a dummy variable taking a value 1 if the module is provided entirely in Welsh or 0 if it is in English,

ε_i is an error term and the Greek letters are parameters to be estimated.

We should note that we have included a quadratic term to allow for the possibility of a U-shaped curve.

Because the data are very dispersed we estimate our model using the Huber-White sandwich estimator of variance to ensure that our standard errors are robust (our main conclusion did not change when using a method more robust to outliers, such as least-absolute value regression).

The results of our model are presented in Table 4.13 in four different versions:

- Model 1 shows that, overall, Welsh medium modules are more costly than English medium modules.
- However, as we have seen before, the modelling does not show any statistically significant differences between the costs of Welsh and English medium modules *once we control for the size of the module*. This is shown in Models (2) and (3). They incorporate the size of the module (including the quadratic form of the variable) and both have insignificant coefficients for the proportion of Welsh dummy.
- Finally, Model (4) also includes dummy variables for each HEI (which are jointly significant) but the results do not change notably. In addition, we have also tried including a variable for the years the module has been taught, but it was not significant.

All models have good statistical properties and Model (3) and (4) show a reasonably good fit of the data (an R-squared above 40%).

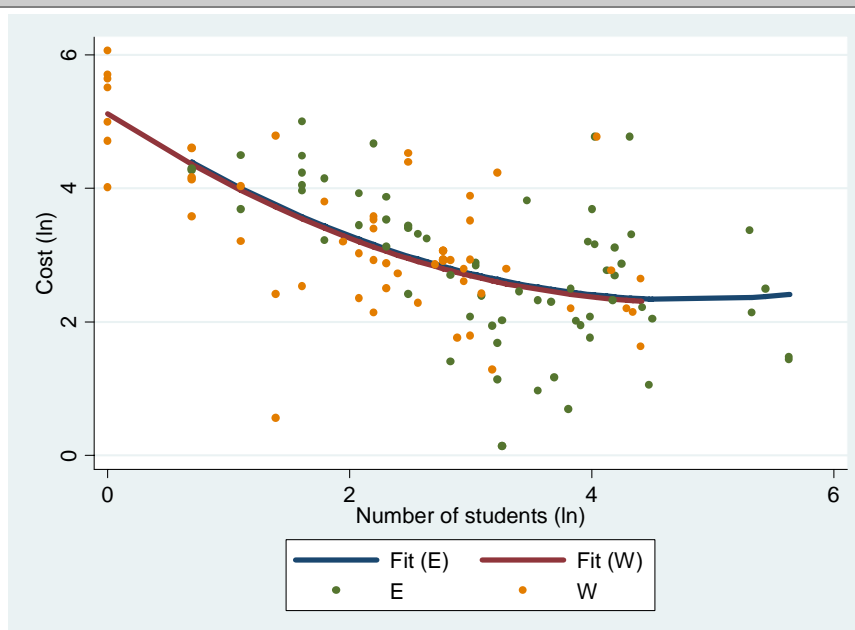
Table 4.13: Estimates of regression models

	(1)	(2)	(3)	(4)
w	0.485 (2.40)*	-0.053 (-0.33)	-0.035 (-0.22)	0.056 (-0.27)
ln(n)	- -	-0.54 (-8.54)**	-1.175 (-7.32)**	-1.018 (-6.21)**
[ln(n)]²	- -	- -	0.123 (3.98)**	0.095 (2.92)**
University dummies	- -	- -	- -	Yes** [3.71]**
Constant	2.802 (19.75)**	4.54 (21.53)**	5.148 (22.66)**	5.392 (11.94)**
Observations	127	127	127	127
R-squared	0.04	0.36	0.41	0.52

Note: Robust t-statistics in parentheses. F-test of joint significance in square brackets. * Significant at 5%; ** Significant at 1%.

A good way to illustrate the models is to plot the costs (as observed) and the module size for both English and Welsh medium modules. This is shown in Figure 4.6 for the original data and for the transformed data that is used in the model. We observe that the costs per student per credit are decreasing. This suggests that economies of scale are present. We also observe that there are no significant differences between the costs of Welsh and English medium provision – the two curves almost exactly match each other.

Figure 4.6: Model fit for average cost of E and W provision (Model 3).



4.4.5 Avoidable costs

We have failed to detect any statistically significant differences between the unit costs associated with the provision of Welsh and English modules, *once the differences in module size have been taken into account.*

Does this mean that HEIs providing education through *both* English and Welsh have similar costs to those that provide education through the medium of English only?

The answer is clearly no, as institutions providing education through both languages are incurring some costs that could be avoided if all module were provided in English only.

To illustrate this we assume two situations:

Situation 1: education is provided to a number of students (n) through the medium of English only.

Situation 2: education is provided through English and Welsh to n^E and n^W students respectively (and where $n^E + n^W = n$).

Because economies of scale are present, an HEI moving from Situation 2 to Situation 1 would be saving some costs because the cost per student falls whilst the total numbers of students remains the same. For example, instead of having two teachers lecturing in two modules the institution could have one teacher if the module was given only in English, as long as any maximum modules size constraints were not breached.

It is clear that not all costs are avoidable. For example, costs of marking and assessment for each student could not be avoided by moving from Situation 2 to Situation 1. However, a number of costs such as teaching, preparing teaching materials, and preparing a new module could be avoided with Situation 1.

To compute the incremental cost of Welsh medium provision we calculate the additional per student cost a HEI has from being in Situation 2 when it could be in Situation 1. Therefore, we need the difference in costs from both situations.

We define the total costs (C) for each situation as the following:

$$\text{Situation 1 (E only): } C^E = F^E + V^E * (n^E + n^W),$$

$$\text{Situation 2 (E and W): } C^{E+W} = [F^E + V^E * (n^E)] + [F^W + V^W * (n^W)],$$

where F and V are fixed and variable costs, respectively, and

n^E and n^W are the number of students for English (E) and Welsh (W) provision.

The per student incremental cost of Welsh provision can be computed as

$$c^E / c^{E+W} = (C^E/n) / (C^{E+W}/n), \quad (1)$$

where $n = n^E + n^W$.

Applying (1) to our matched sample we calculate that Welsh medium provision is 26% more costly (using median estimates).²³ This is the case even where teaching time, hourly staff costs and assessment costs are the same as shown in our first scenario (Scenario A) in Table 4.14.²⁴

The other scenarios show the impacts of varying some of the assumptions:

- For Scenario B we have also assumed that the hourly staff costs are 10% higher for Welsh medium teachers. The results change only slightly to 30% additional costs for Welsh medium provision (Scenario B in Table 4.14).

²³ 36% more costly using mean estimates.

²⁴ In addition, we also made this calculation using data from bilingual modules and arrived at a very similar result.

- In Scenario C, provision through the medium of Welsh incurs an additional 10% assessment cost per student. The results show that Welsh medium provision is 28% more costly (Scenario C in Table 4.14).

Table 4.14: Incremental costs of Welsh medium provision

	Scenario A	Scenario B	Scenario C
Teaching time (W/E)	100	100	100
Staff hourly costs (W/E)	100	110	100
Assessment costs (W/E)	100	100	110
Incremental cost	26%	30%	28%

4.5 Costs associated with delivering collaborative provision

We discussed issues around the scope for collaborative provision with the HEIs. In general, the position of HEIs was that there was some collaboration activity being undertaken; that there was some limited scope for increasing this; but that the scope for cost saving through collaborative provision wasn't sufficient for it to make any significant contribution to increasing levels of Welsh medium provision. Some felt that e-learning was an appropriate approach for Welsh medium provision, since demand is low and distributed, though others felt that e-learning was a costly approach, both in terms of initial set up costs and ongoing updating and development costs.

There are a number of means through which collaboration could be undertaken. It could be through collaboration on the development of teaching materials, since this is an area where there are clear problems that lead to additional costs for Welsh medium provision. This need not be linked to collaboration on teaching. That however, is also a possibility with the main options being for:

- a lecturer to teach at more than one HEI;
- students to be taught at more than one HEI;
- joint development of on-line learning materials;
- joint development and/or provision of training for Welsh medium teaching.

There are also potential forms of collaboration related to the demand side of the problem. These could involve collaboration on marketing of Welsh medium courses for example.

There is some collaborative activity currently being undertaken whereby individual HEIs are working with other HEIs. Two of them, for example, are approaching schools jointly in order to undertake marketing activities in relation to Welsh medium HE courses. They have also collaborated on the development of Welsh medium teaching materials. Two other HEIs have collaborated on teaching, including the transport of students from one HEI to the other. They are also in the process of establishing a joint teaching department.

There are a number of barriers to the further development of all these forms of collaboration. Some of these are practical and cost-related. HEIs told us, for example, that in general both teaching staff and students were reluctant to travel far to provide or receive teaching at another Institution. The need to spend time travelling also had an impact on productivity levels. Whilst this may impact on collaboration of this nature between HEIs in north and south Wales, for example, the impact on HEIs that are much closer to each other would be more limited. Some HEIs thought video-conferencing might have an occasional role but there were concerns that learning of this nature for Welsh medium students did not enable them to develop any relationship with the lecturers and might also give the impression that Welsh medium courses were “second class”.²⁵ There also appeared to be a general consensus that e-learning materials were very expensive to develop and to keep up to date. HEIs also told us that collaboration raised issues about timetabling and quality standards and that it was time-consuming to resolve these issues.

Part of the problem may be that in many senses the HEIs are competing with each other – they are competing for students, for staff and for funding. Supply side constraints could certainly be eased if there were a means of facilitating the mobility of staff across institutions – so that a Welsh-speaking specialist in cosmology, for example, could teach one day a week at an institution other than her main employer. There are a number of institutional barriers to this at present:

- the home institution of the academic may not allow her to take an outside earning opportunity because it would reduce her research time (or timetabling at her home institution may render it impossible);
- the host institution may be reluctant to provide a degree programme where they have no long term contractual relationship with the individuals involved in delivery;
- institutions are nervous about such arrangements given the quality assurance environment;
- there may be a lack of clarity about funding arrangements.

²⁵ Although one person pointed out that it wasn't possible for a student to develop much of a relationship with a lecturer when learning in a lecture with 200-300 other students!

If collaborative provision is to be further encouraged, HEFCW may need to provide further incentives aimed at overcoming these barriers.

There are also other activities which can be described as “collaborative” activities. A number of HEIs have developed franchising relationships with FE colleges whereby the FE colleges teach a course, sometimes through the medium of Welsh, and the degree is awarded by the HEI. For those HEIs concerned, it may be the case that this form of collaborative provision is the most cost effective way for them to offer Welsh medium teaching.

Generally the HEIs entering into these agreements are those which offer little or no direct Welsh medium provision and so would be faced with a number of cost barriers to developing their own provision. The FE colleges who provide the teaching are usually those who provide a significant degree of Welsh medium teaching to their own students and for whom it may be thus cheaper to provide additional Welsh medium teaching. One HEI also developed a collaborative form of e-learning where e-learning materials were produced and students supported by tutors who were scattered around a number of affiliated FE colleges. Another HEI has used video-conferencing in its franchise arrangements with FE colleges.

The Welsh Medium Teaching Development Centre is based at the University of Wales and is supported by all higher education institutions in Wales, including those that are not members of the federal university. Its activities can be viewed as examples of activities that can be carried out collaboratively. A number of activities are undertaken by the Centre including the following.²⁶ Several of these are funded by the Welsh Assembly Government through the HEFCW Reconfiguration and Collaboration Fund.

- **Welsh medium postgraduate scholarship scheme.** Currently at least ten scholarships are available annually for this scheme which aims to increase the number of academic staff capable of teaching through the medium of Welsh. Students awarded scholarships study for a doctorate over a three or four year period and then are funded for a further year as teaching fellows. At the end of that period, the institution awarded the scholarship is expected to create a full-time lecturing post for which the scholarship holder will be able to apply. One of the main responsibilities for the new post-holder is expected to be to teach through the medium of Welsh.
- **Teaching fellowship scheme.** This scheme offers support to institutions to employ new staff that are able to teach through the medium of Welsh. The fellows teach for at least five hours a week through the medium of Welsh and are also expected to develop new Welsh medium provision that will be equal to a module of at least 20 credits. At the end of that period, the institution awarded the fellowship is expected to create a full-time lecturing post for which the

²⁶ See www.mantais.cymru.ac.uk.

fellowship holder will be able to apply. One of the main responsibilities for the new post-holder is expected to be to teach through the medium of Welsh. The scheme was first implemented in 2005/06 when five fellowships were awarded.

- **Vocational fellowship scheme.** This new scheme will offer support to institutions to develop their provision in vocational areas. The first vocational fellowships are available for the year 2006/07.
- **Marketing.** A number of marketing activities are underway to promote Welsh medium study in higher education. A marketing officer has been recruited, and a new website and brand (Mantais) have been developed.
- **Paneli maes network.** This is a network of subject-based panels whose aim is to provide a forum for promoting inter-institutional collaboration in issues related to Welsh medium provision. They provide opportunities for academic staff to discuss and plan new provision and materials within their disciplines. The subject panels include: Education; Law; Media; Sport and Leisure; Geography and the Environment; Lifelong Learning ; Social Sciences; and History.

4.6 Scope for establishing benchmark costs

The Terms of Reference refer to benchmark costs for developing “various forms of new provision” beyond core provision. Benchmarks are sometimes developed for use as a general input into policy development alongside a range of other types of information. They can also be developed with a much more specific purpose in mind – such as for use in a funding formula in order to determine the level of funding received. In the latter case the cost benchmarks would generally be expected to be more robust, with the ability to reproduce the same benchmarks consistently over time and between organisations subject to the benchmark.

There are a wide range of factors that influence the costs of Welsh medium provision. These factors vary both across HEIs and within HEIs (e.g. by ASC). Variation in the circumstances of provision makes it more difficult to develop robust cost benchmarks. However, the analysis of costs suggests that one factor dominates the others as a cost driver – the number of students per module. The dominance of this factor may make it more likely that a benchmark based on this factor could be useful for policy purposes.

Nevertheless, the data on costs collected through the questionnaire exercise will inevitably not be as robust as data that is collected, in other circumstances, through an audited accounting procedure every year. It would be harder to repeatedly collect consistent data year after year through the survey exercise, for example. Where there is scope for interpretation in the development of cost data then that introduces the possibility that different

people interpret requirements in different ways, making it harder to judge whether like is being compared with like.²⁷

In circumstances where cost data are relatively poor, other types of data have been used for benchmarking purposes. Often factors that can be measured more robustly and transparently and that are closely related to costs are used. In the case of Welsh medium provision for example, we believe that the numbers of students per module are closely related to costs. This factor is also relatively easy to measure. Whether this can be used for benchmarking depends on the objective for benchmarking, but it could be used in a funding formula, for example, to introduce a tapering premium system which may include a threshold above which additional funding will not be provided. We discuss options for the funding formula in the next Chapter.

²⁷ NB It is not necessarily the case that it would be possible, in this case, to collect more robust accounting data. The same problems of consistent interpretation would also need to be faced in the collection of accounting data. Experience elsewhere, eg in the regulated water industry, suggests that the introduction of uniform accounting systems across all HEIs that would enable the collection of data on the costs of Welsh medium provision would be very expensive and would probably take a few years and a considerable amount of time and resources before consistent data was being generated every year and across HEIs.

5 The Provision of Mainstream Funding Support

5.1 Background

One of the objectives of this study was to assess whether a premium system is the most effective way of providing mainstream support. Currently additional funding for Welsh medium provision is provided through the use of a premium in the funding formula. Premia are also available in order to widen access for socially excluded groups and for students with disabilities.

The calculation of the premium for Welsh medium provision is more complex. It is a per capita payment that applies to students taking modules where a minimum of 25% of the module is taught through the medium of Welsh. The payment varies with the proportion of the module taught through Welsh and with the credit value of the module (a higher payment for a higher proportion in Welsh and for a higher credit value) and is also linked to the standard unit of resource for the module.²⁸

The form of this premium may encourage the development of modules that are at least 25% taught through the medium of Welsh. However, the main explicit policy objective in this area, in *Reaching Higher*, does not specify modules/courses that have any set proportion of Welsh medium provision. It refers instead to the number of students receiving any part of their (higher) education through the medium of Welsh.

At the time that objective was formulated the latest estimate of the proportion of students learning some part of their course through the medium of Welsh was 3% in 1999/00. We have seen that the equivalent figures for 2003/04 and 2004/05 were 3.2% and 2.9% respectively. Lack of progress against the target suggests that there may be a need to consider alternatives to the current funding formula, in particular alternatives that would provide HEI's with a greater incentive to increase Welsh medium provision.²⁹

²⁸ For more details on the funding formula and the Welsh medium premium, see Annex 6.

²⁹ We have not undertaken an analysis of the underlying reasons for this stagnation of performance against the objective, but we note that there are also likely to be factors other than the funding formula which have affected performance, including long term factors such as the supply of teachers able to teach through the medium of Welsh and the demand for Welsh medium modules from students.

5.2 Alternative funding approaches

5.2.1 Suggestions from Interviewees

Many of the HEIs and at least one of the stakeholders suggested to us that the current 0.26 proportion in the formula provided an insufficient incentive for HEIs to expand Welsh medium provision.

One stakeholder commented that the current premium system benefited most those institutions that “tinkered around the edges” in terms of Welsh medium provision and suggested that direct funding of Welsh medium posts might be more effective (though possibly inconsistent with the general policy stance of devolving decision-making to the HEIs).

It was also suggested that, given the limited demand for Welsh medium provision, consideration should be given to confining premium funding to specific HEIs that already offered a high level of Welsh medium provision. It was argued that this type of approach might avoid the situation where increasing supply by the HEIs leads to ever more competition for the limited pool of students willing and able to learn through the medium of Welsh. It might also be argued that this approach could contribute to achieving some economies of scale, though as can be seen from the discussion of costs, scale issues are complex and such economies might equally be achieved through the specialisation of HEIs in Welsh medium provision in specific subject areas.

An alternative funding model was suggested, which would involve the payment of a fixed ‘premium’ of, say £15k for each module delivered entirely through the medium of Welsh, regardless of how many students enrol. Bilingual modules would attract a lower premium, based on a sliding scale down to a minimum of £5k for those modules which only involved 5% of the curriculum delivered in Welsh. It was also suggested that a more significant form of subsidy would be to provide an equal level of funding for Welsh medium modules and parallel English medium ones, thus, allowing departments to recruit Welsh speaking lecturers and deliver to smaller groups of students.

5.2.2 Discussion of key issues

Possible changes to the funding mechanism are discussed here in the context of there being no specific increase in Welsh medium funding through the funding formula – rather that existing funds are reallocated in a manner which may do more to encourage higher levels of Welsh medium provision.³⁰

³⁰ Note that there was a clear message from HEIs in our interviews that current funding for Welsh medium provision was insufficient.

Amending the 25% language threshold

The most obvious potential change to the funding formula would be an adjustment that ensured it matched more closely the terms of the policy objective in *Reaching Higher*. This would involve removing the stipulation that the premium applies only to those modules where more than 25% of the teaching is through the medium of Welsh.

At present, the number of Welsh medium modules where less than 25% is taught through Welsh is only 36 (4% of Welsh medium modules). However this low volume is likely to be influenced by the current funding link to modules where more than 25% is taught in Welsh, and so might increase significantly if this link were broken. On its own, this change might increase funding pressures.

A variant to this change could involve a sliding scale with higher levels of funding for higher percentages of Welsh medium provision in order to retain some incentive to offer higher levels of Welsh medium content. This could simply involve a lower rate below the existing 25% threshold and a higher rate above it.

This approach may make it easier for institutions and departments who currently offer little or no Welsh medium modules to introduce some provision. It may also make it more attractive to introduce some Welsh medium provision on courses that are not modularised.

Recognising the viability of modules with more students

In our discussions with HEIs, a small number of them indicated to us the level of student numbers that were necessary in order for a module to be considered viable. They emphasised that these were rough rules of thumb only and were often ignored where there were specific reasons to develop a module, e.g. to further Welsh medium provision. The thresholds mentioned to us were in the range 16 -20 students.

It might be possible to recognise that there is a break-even point of this nature through the funding formula. This could involve allocation of the premium on the basis of the number of students below the break-even point only. Thus, with a break-even point of 20, a Welsh medium module with 25 students, would receive the premium for 20 students only.³¹ Where this threshold does not overestimate the break even point, further increases in the number of students enrolled on the module should not be discouraged (as long as core funding for those students is sufficient to cover the additional costs).

At present, the average number of students on a Welsh medium module is around 11, whereas the average number of students on an English medium

³¹ An alternative might be to allocate the premium only to those modules where there are fewer than 20 students, but this might give perverse incentives to restrict the number of Welsh medium students on any module to fewer than 20.

module is around 26.³² Table 5.1 below shows the number of Welsh medium modules, by HEL, that are both above and below the threshold of 20 enrolled students per module. Under this potential change to the funding formula, 169 Welsh medium modules would lose some element of premium funding – 60 of these at Trinity College. These losses would be small unless there were significantly more than 20 students enrolled on a module.

Table 5.1: Number (percentage) of Welsh medium modules by university and module size in 2004/05.

University	20 or fewer enrolments	More than 20 enrolments*	Total
UW Newport	26 (78.79)	7 (21.21)	33 (100)
NEWI	2 (22.22)	7 (77.78)	9 (100)
UWIC	48 (81.36)	11 (18.64)	59 (100)
University of Glamorgan	9 (42.86)	12 (57.14)	21 (100)
Swansea Institute of HE	N/A	N/A	N/A
Trinity College, Carmarthen	126 (67.74)	60 (32.26)	186 (100)
UW Lampeter	57 (96.61)	2 (3.39)	59 (100)
UW Aberystwyth	196 (88.29)	26 (11.71)	222 (100)
UW Bangor	340 (93.66)	23 (6.34)	363 (100)
Cardiff University	68 (85.00)	12 (15.00)	80 (100)
UW Swansea	49 (84.48)	9 (15.52)	58 (100)
Royal Welsh College of Music and Drama	27 (100)	0 (0)	27 (100)
Total	948 (84.87)	169 (15.13)	1117 (100)

Note: * There were 63 Education modules with more than 20 enrolments in 2004/05 (7 in UW Newport, 43 in Trinity College, and 13 in UW Bangor).

Source: HESA (2004/05) and LE calculations.

³² Source: HESA database. These figures are means. Median student numbers are 7 and 13 respectively.

Table 5.2 shows the potential impact by subject area, with the Humanities and Education being the areas most affected.

Table 5.2: Number (percentage) of Welsh medium modules by subject area and module size (enrolments) in 2004/05.

Subject area	20 or fewer enrolments	More than 20 enrolments	Total
Clinical and Pre-clinical Subjects	N/A	N/A	N/A
Subjects & Professions Allied to Medicine	15 (100)	0 (0)	15 (100)
Science	50 (92.59)	4 (7.41)	54 (100)
Engineering and technology	1 (100)	0 (0)	1 (100)
Built Environment	17 (100)	0 (0)	17 (100)
Mathematical Sciences, IT and Computing	19 (63.33)	11 (36.67)	30 (100)
Business and Management	8 (100)	0 (0)	8 (100)
Social Sciences	83 (89.25)	10 (10.75)	93 (100)
Humanities	420 (84.34)	78 (15.66)	498 (100)
Art, Design and Performing Arts	183 (98.39)	3 (1.61)	186 (100)
Education	152 (70.70)	63 (29.30)	215 (100)
Total	948 (84.87)	169 (15.13)	1117 (100)

Source: HESA (2004/05).

Savings from this adjustment might be used to increase the level of per capita funding on modules where less than 20 students enrol and/or it might also be used to introduce a payment per module. Further possibilities could be for savings to be absorbed by the extension to modules including less than 25% Welsh medium provision or to contribute to additional project based funding for encouraging collaborative provision.³³

As discussed earlier, most of the costs of developing Welsh medium provision are incurred at the level of the module, regardless of the number of students who take up the module. An introduction of funding at the level of the module may consequently reduce the risk to HEIs of introducing Welsh medium modules. This approach would in some sense mirror the approach taken by one HEI to allocate the premium internally, whereby some of the

³³ See discussion of collaborative provision in Chapter 4.

funds received by one department (Education) with a high level of Welsh medium provision and students are allocated to other departments providing Welsh medium modules to much smaller student numbers.

The possibility of encouraging the development of new Welsh medium modules that are unattractive to students³⁴ might be viewed as a downside to allocating funding by module. However, the combination of per module and per capita funding might limit this effect particularly where the per module element of funding is unlikely to cover all of the costs of module development. With this approach, one possibility could be for the per module funding to be sourced from development funding for a fixed period, rather than from the Welsh medium premium.

If the provision of an element of funding per module were to lead to a reduction in marketing efforts by the HEIs, one policy response might be to increase the level of marketing provided centrally.

Encouraging collaboration

There is at least some collaboration taking place already, so the current approach does seem to be providing some incentive to collaborate. Slow development of collaboration may be due to a number of factors. It may just be that collaboration, by its nature, takes time to develop and that it will continue to develop with the HEIs learning from their experiences and being more encouraged as they have positive experiences. It may be the case that there are barriers to its development which will limit further development, unless they are removed, regardless of the extent to which the HEIs have an incentive to develop collaborative activities. It may also be the case that “collaborative provision” can be more cost-effectively provided centrally than it can by direct collaboration between institutions. It is likely that all of these factors are relevant some of the time.

One of the perceived barriers to collaboration at present is uncertainty about the funding impacts and so one relatively simple way of encouraging collaboration through the funding premium might just be to clarify the funding impacts of collaborative provision. How the impact is taken into account may be less important than providing clarity on this point. For example, some respondents felt that if it were clear that the HEI awarding the degree received all of the relevant funding premium then the HEIs concerned could find the means to provide the necessary incentive to both parties. The most appropriate means would depend on the form of collaboration, but it could, for example, include the making of side payments (assuming there are no institutional/legal barriers to this).

Some activities may be more cost effectively undertaken centrally than through direct collaboration. Some of the marketing and training activities

³⁴ But attractive to lecturers.

currently being undertaken centrally by the Welsh Medium Teaching Development Centre are examples of this.³⁵

³⁵ See outline of the Centre's activities on page 44.

6 Conclusions and Recommendations

6.1 Additional costs of Welsh medium provision

Using the responses to the survey of HEIs, we have estimated the additional costs of Welsh medium provision using three approaches.

First, we estimated the average costs of English medium modules across the sample and compared them to the average costs of Welsh medium modules across the sample. This comparison suggested that the average costs of Welsh medium provision per student per credit were around 14% higher than the costs of English medium modules.

An examination of these cost differences for modules with different numbers of students enrolled suggested that for very small numbers of students (1 to 5) the costs of Welsh medium provision were about 14% greater. For 6 to 10 students the costs of Welsh medium provision were half the costs of English medium provision, but this is because in this range the English medium modules were mainly science-based and the Welsh medium modules were mainly arts-based. Above 11 students, costs were very similar.

Whilst we have attempted to reflect the impacts of different student numbers and credit levels in this analysis, there are a number of other potential factors that may be affecting the results, including institutional factors and the ASC.

Our second approach examines the average cost difference between pairs of English medium and Welsh medium modules. By selecting pairs of modules that differ only in the language in which they are taught and the number of students enrolled, we have sought to control for the other potential cost drivers. These constraints mean that the sample size for this analysis is much smaller – it is based on 17 pairs of modules. The analysis suggests that the costs of Welsh medium provision per student per credit were around 25% higher than the costs for equivalent English medium modules.

A further examination of the data suggested that most of this 25% difference in unit costs is likely to be due to the higher number of students on English medium modules.

Our third approach is a regression analysis which seeks to determine a statistical relationship between the costs per student per credit and a number of explanatory factors including whether the module is provided through the medium of Welsh. Our analysis did not find any statistically significant relationship between Welsh medium provision and the cost of provision per student per credit, once the level of student enrolments was accounted for.

On the basis of the data available to us from the survey responses we conclude that the cost of Welsh medium provision per student per credit is higher than the cost of English medium provision per student per credit, at

the level of the module³⁶. The main factor driving this cost difference is the number of students enrolled on each module. In our interviews most stakeholders also suggested that student numbers are a key issue. Since Welsh medium modules generally have lower student enrolments, they tend to be less viable. The decision to run potentially unviable or marginal modules is clearly a complex issue for institutions in terms of balancing conflicting demands upon inevitably limited resources.

Although some of the stakeholders we met did feel that there was not a significant additional cost of Welsh medium provision per module once the number of student enrolments is taken into consideration, most felt that there were additional costs and that these would not all be accounted for through differences in the number of enrolments module size. If these cost differences exist then they are not captured in our data.

It may be the case that our data is too limited to capture all of the cost differences. For example, some modules may not be provided through the medium of Welsh at all because the costs of doing so would be too high. If this is the case, it is not possible to observe these costs in our sample (which was necessarily confined to modules which are provided) and so our results would not reflect these potential, though unproven, additional costs of Welsh medium provision.

Of course, the number of students enrolled on each module is the outcome of demand and supply factors.

Existing initiatives designed to strengthen the supply side were discussed at section 4.5 of this report, but essentially, they revolve around developing the capacity of teaching staff, creating course materials and encouraging inter-institutional collaboration in the development and delivery of Welsh medium provision.

We believe that, at present, it is demand factors that are the more significant constraint on increases in student enrolments on Welsh medium modules. Considerably less attention has been paid to addressing this issue, albeit that we found evidence of some limited and more recent demand side interventions. We believe that there may be scope for stepping up actions designed to stimulate student demand for Welsh medium provision, not only as a means of contributing to the policy target for the proportion of students receiving some part of their higher education through the medium of Welsh, but also as a means of reducing the costs per student of Welsh medium provision and rendering more Welsh medium modules viable.³⁷

³⁶ That is, ignoring some potential additional costs of Welsh medium provision that may be incurred more centrally, such as library resources and some translation.

³⁷ In our interviews, a number of stakeholders referred to the limited size of the pool of potential applicants (e.g. the numbers of pupils in secondary education learning through the medium of Welsh) and to factors which limit the proportion of those potential applicants that actually takes up Welsh medium provision in higher education.

An assessment of the potential approaches to encouraging take up of Welsh medium provision is beyond the scope of this study, but it is clear that this is an important issue that needs to be addressed in the long term.

6.2 Alternative funding approaches

A number of possible changes to the current approach to funding through the Welsh medium premium have been discussed.

At present the Welsh medium premium is a per capita payment that applies to students taking modules where a minimum of 25% of the module is taught through the medium of Welsh. The payment, which is not applied to Welsh language and Welsh literature modules, varies with the proportion of the module taught through Welsh and with the credit value of the module (a higher payment for a higher proportion in Welsh and for a higher credit value). It is also linked to the standard unit of resource for the module.

For ease of exposition, possible changes to the funding mechanism are discussed in the context of there being no specific increase in Welsh medium funding through the funding formula - rather that existing funds are reallocated in a manner which may do more to encourage higher levels of Welsh medium provision.³⁸

In our view there are two elements of the current premium mechanism where potential changes seem likely to be the most useful avenues to explore further. First, the 25% threshold on Welsh medium content and second, the relationship between the premium and the number of student enrolments on each module.

Amending the 25% language threshold

The policy objective in Reaching Higher is a target for the percentage of students receiving any part of their higher education through the medium of Welsh. There is no reference to any proportion of their education that needs to be undertaken through the medium of Welsh. Under the current funding model, the premium is only available to modules where at least 25% of provision is through the medium of Welsh. There is a potential for two alternative models - removal or reduction of the 25% threshold - to encourage the development of more modules in total, though these additional modules would have a lower Welsh medium percentage.

The advantages of the current model, with the 25% threshold, are that it has the potential to ensure that at least this level of Welsh medium content needs to be provided for premium funding to be available. Many would argue that lower levels of Welsh medium provision than this would have very little value. Currently, there are not many Welsh medium modules in the range 25% to 99% - most are provided at the 100% level. This suggests that the

³⁸ There is no intention to suggest here that additional funds either will or will not be forthcoming.

current threshold may be doing little to discourage lower levels of provision in any case.

Introduction of the second model – with no threshold – would make it easier for HEIs to introduce additional Welsh medium provision at lower levels. However, removing the threshold altogether would make the decision on when to apply the premium difficult. It would leave the system open to abuse by making it much easier to claim the premium in situations where students are gaining very little benefit from Welsh medium provision.

The third model – involving the introduction of a lower threshold – might have a beneficial impact if, for example, it was much easier for HEIs to introduce additional Welsh medium provision at the level of, say, 10%, perhaps by having one Welsh medium tutorial class in each module. Modules with low levels of Welsh medium provision may be more attractive to students who lack confidence in their ability to pursue their higher education through the medium of Welsh. Success in such a module may encourage these students to take up other modules with higher Welsh medium content. Nevertheless, some may argue that reducing the threshold, whilst not in breach of the letter of any policy, may not be entirely in keeping with the spirit of the Reaching Higher target.

Recommendation 1: *The policy objective in Reaching Higher is a target for the percentage of students receiving any part of their higher education through the medium of Welsh. Given that this makes no reference to any proportion of their education that needs to be undertaken through the medium of Welsh, the scope for reducing the threshold for Welsh premium funding below 25% should be explored further. One of the main issues to consider will be whether it is possible that some students could benefit from provision where Welsh medium content is lower than this threshold.*

Any reduction of the 25% threshold might have the effect of encouraging institutions to introduce modules where the amount of Welsh medium content is spuriously low. At present there appears to be a lack of clarity about how the 25% threshold should be calculated and limited auditing of the relevant data on Welsh language provision. As Welsh medium provision expands, and more resources are devoted to it, so the need will grow for monitoring and verification by HEFCW of the factors that drive funding in order to ensure that funds are allocated properly. This will be the case regardless of whether any adjustments are made to the 25% threshold.

Recommendation 2: *Consideration should be given by HEFCW to the introduction of clearer guidelines on the calculation of the Welsh medium percentage level alongside more monitoring and verification of the data in order to ensure consistency in the allocation of the premium.*

Recognising the viability of modules with more students

Our analysis of costs has shown how important the student roll on each module is for the differences in costs between Welsh medium and English medium modules. For both Welsh medium and English medium modules,

the higher the numbers of students enrolled, the lower the costs per student. Welsh medium modules, however, tend to have lower student numbers.

The current Welsh medium premium is a per capita payment. It does not vary with the numbers of students enrolled on a module. As student numbers on a module rise and the average costs per student fall, there will be a point where the revenue per student just matches the cost per student. Above this point revenues will exceed costs. A small number of HEIs indicated that they used rules of thumb about break even points in terms of the numbers of students per module. The break even points mentioned to us were in the range 16-20 students.

One potential adjustment to the premium mechanism that would reflect this cost structure would be to only make the premium available in respect of the first y students on each module, where y is a number such as 20. In this situation, a module with 12 students would receive a Welsh medium premium for 12 students plus core and other funding relevant for this module. A module with 25 students would receive a Welsh medium premium for 20 students plus core and other funding relevant for all 25 students. In essence, this approach would contribute to reducing the disincentive inherent in delivering modules to small (unviable) numbers of students, whilst avoiding the potential pitfall of building an unnecessary reward into the system for the provision of Welsh medium modules in subject areas where demand is sufficient to sustain provision anyway.

Such an approach would be likely to release resources which could be reinvested in increasing the level of per capita premium for those first y students on each module. An alternative to increasing the per capita premium in this way would be to introduce an additional Welsh medium payment per module. The latter would be different from development funding in that it would be recurrent and not just available as the module was being developed.

As long as the threshold is appropriate, these combinations could encourage greater provision of Welsh medium modules in those subject areas where current demand is marginally too weak to justify putting on provision. If the views expressed by some stakeholders that demand is, in part, a function of supply is correct, the virement of resources from sustainable Welsh medium provision to more marginal modules should help to sustain modules through a period of building up demand.

These potential advantages need to be weighed against the administrative costs of introducing and monitoring any amended premium mechanism. Care would need to be taken in order to ensure that HEIs do not artificially create "identical twin" modules in order to avoid the funding implications of breaching the threshold or that, in the case of a module-based payment that nominal modules are not set up with little effort to recruit to them. In view of the limited number of Welsh medium modules currently in existence, HEFCW scrutiny of module titles might provide sufficient safeguard.

Recommendation 3: *The scope for introducing a threshold for the number of enrolments on a module, above which the Welsh medium premium is not offered, should be explored further. Any savings from the introduction of this threshold could be used to increase the level of the premium provided for enrolments below the threshold or, alternatively, to introduce a Welsh medium payment per module. An important consideration will be the level of the threshold. If the threshold is too low, it may not provide adequate incentives for HEIs to increase provision above the threshold. We do not envisage that this approach would replace any development funding that is available.*

Annex 1 Interviews with HEIs

The following individuals were interviewed by the project team in the period between mid January 2006 and early March 2006.

Name	Position	Institution	Interview Date
Professor Richard Davies	Vice-Chancellor	University of Wales Swansea	12 Jan
Professor Noel Lloyd	Vice-Chancellor	University of Wales, Aberystwyth	12 Jan
Professor Merfyn Jones	Vice-Chancellor	University of Wales, Bangor	20 Jan
Professor David Warner	Principal	Swansea Institute of Higher Education	23 Jan
Melinda Drowley	Assistant Principal	Royal College of Music & Drama	23 Jan
Professor Robert Pearce	Vice-Chancellor	University of Wales, Lampeter	26 Jan
Professor Michael Scott	Principal & Chief Executive	North East Wales Institute of Higher Education	26 Jan
Paul Whiting	Head of Finance		
Dr Catherine Baxter	Registrar		
Meri Huws Kevin Munday	Pro-Vice Chancellor Director of Planning	University of Wales, Bangor	1 Feb
Professor Anthony Chapman	Principal & Chief Executive	University of Wales Institute, Cardiff	7 Feb
Ifor Gruffydd	Head of Welsh Language Services	Cardiff University	7 Feb
Leigh Bracegirdle	University Secretary	University of Glamorgan	14 Feb
Dyfan Owen John Roberts	Welsh Language Scheme Facilitator	University of Wales, Newport	15 Feb
Prof Ioan Williams	Head of Department of Theatre, Film & TV Studies	University of Wales, Aberystwyth	16 Feb

Dr Medwin Hughes Gwilym Dyfri Jones	Principal Head of Faculty of Education & Training	Trinity College, Carmarthen	21 Feb
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Annex 2 Interviews with Other Stakeholders

The following individuals were interviewed by the project team in February 2006.

Name	Position	Institution	Date Interviewed
Dr Lynn Williams	Secretary General	University of Wales	7 Feb
Ann Jenkins	Head of Bilingual Unit	ELWa	8 Feb
Judith Cole	Higher Education Division	Welsh Assembly Government	8 Feb
Dylan Williams Sdif Hughes	President President	NUS Wales Undeb Myfyrwyr Cymraeg Aberystwyth	8 Feb
Linda Wynn	Vice Principal (Performance and Standards)	Coleg Menai	9 Feb
Dr Heather Graham	Director	Open University in Wales	15 Feb
Ioan Matthews	Director, Welsh Medium Teaching Development centre	University of Wales	6 March

Annex 3 Template of Letter to HEIs

Dear XX

You have kindly agreed to meet with members of the London Economics consultancy team on XXXX in order to discuss the study we are currently undertaking for HEFCW.

As you may remember from Philip Gummett's letter to you dated 1 December 2005, HEFCW have asked London Economics to undertake a study that will:

- i) determine, making explicit the associated assumptions, the additional costs associated with delivering Welsh medium provision in a variety of circumstances, over and above those which may legitimately be expected to be met through core funding.
- ii) consider whether a premium system is the most effective way of providing mainstream support.

It will also determine:

- iii) whether it is possible to establish some "benchmark" costs for developing various kinds of new provision beyond what might be reasonably expected within core funding.
- iv) the costs associated with delivering collaborative provision.

The London Economics team is planning to interview representatives of each Higher Education Institution in Wales between mid January and mid February 2006. The purpose of the interviews will be to discuss the wider issues associated with the study and to understand the views and the opinions of the HEIs in relation to the costs of Welsh medium provision. Specific issues that it will be useful to discuss include:

- General views about the additional costs of Welsh medium provision, both in terms of increasing the number of students on existing modules and in terms of increasing the number of Welsh medium modules.
- Is there a critical mass for Welsh medium provision (at each institution, or faculty/department) below which Welsh medium modules cannot effectively be supplied?
- Are there other forms of provision that could have a significant impact on costs (eg collaborative provision of Welsh medium courses between Higher Education Institutions, enquiry-based learning, on-line learning)?

- How important for costs are constraints on the supply of suitably qualified lecturers capable of teaching through the medium of Welsh? Are there significant variations across subject areas?
- To what extent could increases in Welsh medium provision divert resources away from other valuable activities such as research?
- Whether the current premium system is the most effective way of providing mainstream funding support.

We are also preparing a questionnaire that will be sent to all Higher Education Institutions in Wales. A draft copy of this questionnaire is attached to this letter. This draft has not yet been agreed by HEFCW. We hope that a sight of the questionnaire now will give you and relevant colleagues an indication before the interview of what information we are seeking to collect and that there will also be an opportunity at the interview for us to discuss any potential problems in completing the questionnaire. We expect to request completion of Table 2 for a sample of English medium models only. We will send you the final version of the questionnaire as soon as it has been agreed by HEFCW. The deadline for receipt of the completed questionnaires is likely to be 24th February 2006.

We look forward to meeting you at XXXX on XXXX. If you or any of your colleagues have any questions in the meantime, please do not hesitate to contact me or Patrice Muller.

Best wishes

Siôn Jones

Divisional Director

London Economics

Annex 4 Template of Letter to Other Stakeholders

Dear Stakeholder

As you may be aware, the Higher Education Funding Council for Wales (HEFCW) have asked London Economics to undertake a study of the costs of Welsh medium provision in Higher Education Institutions in Wales. More specifically, the study will:

- i) determine, making explicit the associated assumptions, the additional costs associated with delivering Welsh medium provision in a variety of circumstances, over and above those which may legitimately be expected to be met through core funding.
- ii) consider whether a premium system is the most effective way of providing mainstream support.

It will also determine:

- iii) whether it is possible to establish some "benchmark" costs for developing various kinds of new provision beyond what might be reasonably expected within core funding.
- v) the costs associated with delivering collaborative provision.

The London Economics team is planning to interview a number of Stakeholders in January and February and HEFCW have asked that we speak to you. The purpose of the interviews will be to discuss the wider issues associated with the study and to understand your views and opinions in relation to the costs of Welsh medium provision and the effectiveness of the premium system. Some of the specific issues that we would like to discuss with relevant stakeholders include:

- General views about the additional costs of Welsh medium provision.
- What impacts do the costs have in terms of maintaining existing provision and enrolments, increasing the number of students on existing modules and increasing the number of Welsh medium modules?
- Is there a critical mass for Welsh medium provision (at each institution, or faculty/department) below which Welsh medium modules cannot effectively be supplied?

- What are the circumstances in which provision continues to be offered or is introduced below this viability threshold and what are the cost implications of this?
- To what extent is the cost related to the size of the cohort?
- Are there other forms of provision that could have a significant impact on costs (eg collaborative provision of Welsh medium courses within and between Higher Education Institutions, enquiry-based learning, on-line or distance learning/blended learning)?
- Are there significantly different costs for full-time and part-time provision?
- How important for costs are constraints on the supply of suitably qualified lecturers capable of teaching through the medium of Welsh? Are there significant variations across subject areas?
- To what extent does maintaining and increasing Welsh medium provision impact negatively or positively on other departmental/institutional activities? What are the cost implications?
- Conversely, to what extent to other departmental/institutional activities impact negatively or positively on maintaining and increasing Welsh medium provision? What are the cost implications?
- Whether the current premium system is the most effective way of providing mainstream funding support. What might be the alternatives/variations?

We will be in touch shortly to arrange a mutually convenient meeting time.

Best wishes

Siôn Jones

Divisional Director

London Economics

Annex 5 Questionnaire for HEIs

London Economics Questionnaire for Higher Education Institutions in Wales

The Costs of Welsh Medium Higher Education Provision - A Study for HEFCW

Completion instructions

This questionnaire consists of three tables.

- Table A needs to be completed separately for each Welsh medium module.
- Table B needs to be completed separately for each English medium module.
- Table C need only be completed once for each institution. However, if it is more convenient to complete several versions of this Table (eg for each faculty or department where Welsh medium modules are taught) then this is also acceptable.

This questionnaire can be completed and returned in a number of ways as follows:

- Electronic completion and e-mail to psalsas@londecon.co.uk
- Manual completion and post to:

Pau Salsas
London Economics
11-15 Betterton Street
London WC2H 9BP

Requests for clarification can be made to:

Siôn Jones	Pau Salsas
Tel: (01248) 361 449	Tel: (0207) 866 8184
e-mail: sjones@lewales.co.uk	e-mail: psalsas@londecon.co.uk

Confidentiality

Unless otherwise requested by you, the questionnaire responses, and any analysis that the London Economics team undertakes subsequently, will be made available to HEFCW. Individual responses will not be disseminated further, though summary analysis of all the responses may be, at the discretion of HEFCW.

**The final deadline for return of the questionnaire is
3rd March 2006.**

Table A -Welsh Medium Modules: modules provided in Welsh only or bilingually (English and Welsh).

Please complete using data for 2004/5. If data are only available for a different year (e.g. 2003/04 or 2005/06), please indicate where this is the case.

Please complete a separate copy for each module, filling in as many cells as possible. If data are not readily available, please provide your best estimate if you can or alternatively respond with "not known" or "Not applicable" as appropriate.

Where appropriate please use definitions consistent with those used for data submitted to the Higher Education Statistics Agency (HESA), eg for credit ratings, level of the module, full time equivalents etc.

Respondent's Contact Details*

Institution:
Department/Faculty:	
Name:	
Telephone no:	
e-mail:	

* To be used only if London Economics team need to clarify any part of your responses. Not to be used for any other purposes.

1. INTRODUCTORY DETAILS OF MODULE	
1.1	Name of Module:
1.2	ID:
1.3	Credit rating:
1.4	Level:
1.5	Year of first introduction of the module (or its Welsh medium elements if later):

2. TEACHING TIME			
Please provide the total number of hours delivered for the module as:		English medium	Welsh medium
2.1	Lectures		
2.2	Tutorials/small group sessions (including one-to-one)		
2.3	Laboratory or other supervised time		
2.4	Other (please specify)		

3. PREPARATION & OTHER TIME			
	Hours spent:	English medium	Welsh medium
3.1	Preparing teaching materials, including translation, for lectures (per hour of lecture).		
3.2	Preparing teaching materials, including translation, for tutorials/small group sessions (per hour of tutorial etc).		
3.3	Preparing teaching materials, including translation, for laboratory sessions (per hour of laboratory session).		
3.4	Marking and assessment for the whole module (per student)		
3.5	Preparing a new or revised module (only if the module is a new one or has been substantially revised).		

4. LANGUAGE USE			
		English medium	Welsh medium
4.1	Proportion of teaching materials in each language	%	%
4.2	Is an equivalent English medium module offered? (Y/N): Y/N Please provide the module's ID:		

5. NUMBER OF STUDENTS		
		Total
5.1	Total number of students taught on the module	
5.2	Total FTE of students taught on the module	

6. TEACHING STAFF					
		English medium only	Welsh medium only	Bilingual (English & Welsh)	Total
6.1	Number of staff teaching this module (lectures/tutorials/lab work).				
6.2	How many of the teaching staff are research active, ie entered in the last RAE or likely to be entered in the 2007/08 RAE.				
6.3	How many of the teaching staff for this module are from other institutions.				

7. OTHER COMMENTS

Please include here any further comments you may have on the additional costs (if any) of providing Welsh medium higher education at your Institution.

Table B – Information on English Medium Modules

Please complete using data for 2004/5. Alternatively, use most recent data (please indicate the year if data refer to 2003/4 or 2006/5).

Please complete a separate copy each module, filling in as many cells as possible. If data are not readily available, please provide your best estimate if you can or alternatively respond with “not known” or “Not applicable” as appropriate.

Where appropriate please use definitions consistent with those used for data submitted to the Higher Education Statistics Agency (HESA), eg for credit ratings, level of the module, full time equivalents etc.

Respondent’s Contact Details*

Institution:
Department/Faculty:	
Name:	
Telephone no:	
e-mail:	

* To be used only if London Economics team need to clarify any part of your questionnaire response. Not to be used for any other purposes.

8. INTRODUCTORY DETAILS OF MODULE		
8.1	Name of Module:	
8.2	ID:	
8.3	Credit rating:	
8.4	Level:
8.5	Year of first introduction of the module (or its Welsh medium elements if later):

9. TEACHING TIME		
Please provide the total number of hours delivered for the module as:		English medium
9.1	Lectures	
9.2	Tutorials/small group sessions (including one-to-one)	
9.3	Laboratory or other supervised time	
9.4	Other (please specify)	

10. PREPARATION & OTHER TIME		
	Hours spent:	English medium
10.1	Preparing teaching materials, including translation, for lectures (per hour of lecture).	
10.2	Preparing teaching materials, including translation, for tutorials/small group sessions (per hour of tutorial etc).	
10.3	Preparing teaching materials, including translation, for laboratory sessions (per hour of laboratory session).	
10.4	Marking and assessment for the whole module (per student)	
10.5	Preparing a new or revised module (only if the module is a new one or has been substantially revised).	

11. NUMBER OF STUDENTS		
		English medium
11.1	Total number of students taught on the module	
11.2	Total FTE of students taught on the module	

12. TEACHING STAFF		
		English medium
12.1	Number of staff teaching this module (lectures/tutorials/lab work).	
12.2	How many of the teaching staff are research active, ie entered in the last RAE or likely to be entered in the 2007/08 RAE.	
12.3	How many of the teaching staff for this module are from other institutions.	

Table C Resource Costs and Centrally Provided Services Linked to Welsh Medium Provision

Please complete using data for 2004/05 where available. If data are only available for a different year (e.g. 2003/04 or 2005/06), please indicate where this is the case.

Respondent's Contact Details*

Institution:
Department/Faculty: (if relevant)	
Name:	
Telephone no:	
e-mail:	

* To be used only if London Economics team need to clarify any part of your questionnaire response. Not to be used for any other purposes.

13. TEACHING STAFF COSTS				
		English medium	Welsh medium	Total
13.1	Average hourly costs of staff (£) (Total wages, including NICs and other overhead costs, divided by hours worked)			
13.2	Recruitment costs per recruited member of teaching staff (£)			
13.3	What are the particular difficulties in recruiting staff that are able to teach through the medium of Welsh?			

14. ANNUAL COST OF SUPPORT SERVICES		
14.1	Welsh medium library resources (£)	
14.2	Welsh language teaching support (£)	
14.3	Welsh/English Translation facilities (£) (academic/provision related only)	
14.4	Assessment and examination arrangements (£)	
14.5	Other costs, please list (£)	

15. OTHER COMMENTS
Please include here any further comments you may have on the additional costs (if any) of providing Welsh medium higher education at your Institution.

Annex 6 Current funding formula

This note was prepared by London Economics, with assistance from HEFCW.

1) HEFCW provides three streams of recurrent grant funding:

- Funds for teaching;
- Funds for post-graduate research training
- Funds for research quality

Below, we focus exclusively on the funding provided for teaching.

2) The funds for teaching include the followings elements:

- **Formula element** based on mode, level, academic subject category
- **Per capita payments** recognising various fixed costs
- **Premium payments** for:
 1. widening access for socially excluded groups;
 2. students with disabilities;
 3. Welsh medium provision.

3) The formula element

- Funding allocation is based on the *numbers* (defined below) in a certain group ("funding cells") defined by three characteristics, namely the *mode* of teaching, the *level* of teaching and the *academic subject category* (ASC).
 - Three teaching modes are recognised: 1) full-time and sandwich; 2) part-time; 3) part-time undergraduate franchised out;
 - Three levels of teaching are recognised: 1) undergraduate degree; 2) undergraduate non-degree; and 3) postgraduate taught;
 - Sixteen academic subject categories (ASC) (see table below).

Medical and dentistry - non clinical quota (58.91)	Subjects and Professions Allied to Medicine (43.83)	Built Environment (44.28)	Social Sciences (26.71)	Education - Initial Teaching Training QTS (44.36)
Medical and dentistry - quota (115.46)	Science (48.47)	Mathematical Sciences, IT & Computing (40.33)	Humanities (33.80)	Education - Initial Teacher Training Non-QTS - Bed Primary Year 4 (22.18)
Medical and dentistry - non-quota (58.49)	Engineering and Technology (53.35)	Business and Management (28.87)	Art, Design and Performing Arts (39.80)	Education: Non-Initial Teacher Training (39.08)

Note: figures in (..) represent the 2005/06 resource unit (see overleaf)

- The level of funds allocated in each cell is equal to the numbers funded in that cell times HEFCW's *unit of resource* for the subject (ASC), less fees
 - The units of resource are expressed in terms of £ per *credit value*. Examples of credit values for the three levels of teaching include:
 - One full-time 12-month Master's place = 180 credit values;
 - One full-time postgraduate diploma place = 120 credit values;
 - One year of a full-time undergraduate degree place = 120 credit values;
 - Part-time credit values are pro-rated to the full-time credit values
 - In 2005/06, the fee levels per full-time student are £1,175 at the undergraduate level and £3,085 at the postgraduate level. This translates in fee income per credit value of £9.79 at the undergraduate level and £17.14 at the graduate level
- The *numbers* in each cell: they include *core, addition and recovery numbers*:
 - In the case of non-quota academic subjects, the *core number* is the number of funded credit values for the current year (in this case 2004/05), reallocated from cells with shortfalls relative to

expected enrolment in the current year to cells with excess enrolment, subject to a maximum of expected enrolment

- In the case of quota subjects (Medicine and Dentistry, ITT(QTS) and PCGE (QTS)), the undergraduate core numbers are based on the intake quotas set by the Welsh Assembly Government.
- In addition to the core funding, some further, numbers-based, funding was provided in 2005/06 for sciences. This supplementary funding is based on the *addition numbers* which reflect the conversion of all full-time undergraduate fees-only numbers (i.e., where numbers eligible for funding were greater than funded numbers, the difference between the two figures) into funded numbers for the following academic subject categories: science, engineering and technology and mathematical sciences, IT & Computing
- Finally, HEFCW allocates *recovery* numbers. Any funded credits from the current year not allocated in the core are allocated as recovery numbers if the institution has not under-recruited for both the previous and current year, at a cell level. Any funded credits not allocated by this stage are lost by the institution. In total, core plus recovery numbers will not exceed the current year's funded numbers.

4) Per capita payments

- Per capita payments are made from a fund whose overall level is pre-determined. The allocation of this fund among HEIs and FECs is done on a pro-rata basis, using fundable enrolments as the allocator, subject to a minimum study requirement of 10 credit values (this is equivalent, for example, to 1/12 of a full-time undergraduate year).

5) Premium payments

- *Payment for widening access for socially excluded groups*: this is a per capita payment (£215 for 2005/06). The basis for computing the total payment is the number of students with the relevant socio-economic status subject to a minimum 10-credit value study requirement.
- *Payments for students with disabilities*: this is also a per capita payment (£200 for 2005/06). The eligible basis comprises all students in receipt of the Disabled Students' Allowance and recorded as such in the returns to HESA for

HEIs or HEFCW for FECs. A minimum 10-credit value study requirement applies as well.

- *Payment of provision through the Welsh medium:* the calculation of the payment to each HEI/FEC depends on the use of the Welsh medium for delivery in modules other than Welsh language and literature modules. For a student to attract a premium for the institution, the student has to be taught a minimum 25% of the module through the Welsh medium. The proportion of a particular module which a student takes through the medium of Welsh could vary. For example, one student might do 30%, another 50%. For the modules/courses meeting this requirement, the payment is calculated as the product of:
 - the average student enrolment over the previous two years (i.e., the payment for 2005/06 is based on the average enrolment in 2002/03 and 2003/04); and
 - a premium equal to 0.26 of the relevant standard unit of resource for the module/course:
 - for example, a 20 credit social science module which recorded 18 students taking 25% of the module through the medium of Welsh in 2002/03 and 20 students studying 30% of the module through the medium of Welsh in 2003/04 would attract a premium in 2005/06 of £729.
 - [i.e., 2002/03 (20 credits*25%)*18 = 90 credits
 - 2003/04 (20 credits*30%)*20 = 120 credits
 - $0.26*26.71*((90+120)/2) = £729$