

## Guidelines regarding Interdisciplinarity in Research Degrees

### Background

It is many centuries since any university has claimed to teach each student the universal knowledge that every student needed. Certainly, by the nineteenth century, knowledge was being divided up in the universities, and taught in quasi-independent departments. Each of these taught (and researched) its own discipline. The discipline was marked by its own language, its own journals, its own conferences, its own theories and academic paradigms.

In the late twentieth century a movement started by which the sufficiency of these disciplines was called into question. It was felt that many of the important questions facing humanity require input not just from one of the traditional disciplines but from several of them. Obvious examples of such problems include bio-ethics, climate change, the challenges caused by AIDS, the fight against cancer. But if these are obvious examples, they are not the only examples, and the push for interdisciplinary studies was felt in all the faculties of universities. The universities responded in a number of different ways, most notably by setting up innumerable interdisciplinary research centres or institutes, a large proportion of which produced disappointing results, but some of which produced spectacular results. Accordingly, the call for interdisciplinarity widened.

There are two very important points which emerge from reading the literature on this topic. The first is that interdisciplinarity presupposes the maintenance of the disciplines: without healthy disciplines, there can be no interdisciplinary work. The second is that no evidence is cited to show that interdisciplinary research is better than disciplinary research or inherently more fruitful, more likely to be cited, more likely to succeed or more likely to attract top students. The last point is often presupposed, but some researchers comment on the fact that many 'good' students who are put in interdisciplinary programmes end up doing disciplinary research work. That does not mean that interdisciplinary work should be discouraged: it remains true that there are some problems that require interdisciplinary solutions. It may, however, suggest that disciplinary work should not be downplayed.

Sceptics on interdisciplinarity make several points to support their lack of commitment to the interdisciplinary paradigm. The first is that, even without interdisciplinary structures in place, major ideas cross discipline boundaries. For example, references within Linguistics to any of Psychology (cognitive psychology, neuropsychology and social psychology), Statistics, Geology, Literary studies, Sociology, Biology (cladistics and evolutionary biology, as well as anatomy and physiology), Physics and Art History are relatively well established. The second is that interdisciplinary areas have regularly developed within disciplinary structures, and have in some cases turned into independent disciplines themselves. Materials Science is a case in point, or the development of Natural Philosophy (Physics) from Theology at an earlier stage. A third is that interdisciplinary structures do not guarantee interdisciplinary research: a person researching HIV-AIDS is unlikely to be working both on the social and the anti-viral aspects of the problem simultaneously. Finally, although there are clear benefits to interdisciplinary studies (perhaps especially in arousing the interest of students), there are also clear dangers. Students in interdisciplinary fields may fail to appreciate the language and paradigms of one or both of the disciplines across which their work falls, and risk doing work that is superficial in both disciplines as a result. This last point seems to indicate that

interdisciplinarity requires careful input from competent teachers as well as enthusiastic students. It is not an 'easy' option.

The notion of interdisciplinary research is extremely fashionable. A Google search turns up millions of hits, and hundreds of Universities are specifically advertising interdisciplinary, multi-disciplinary, cross-disciplinary or transdisciplinary research. These various terms sometimes appear to be synonymous, while at other times they are carefully distinguished from each other.

At one end of the scale of engagement with the notion of interdisciplinarity, it appears that some universities interpret the notion as meaning that an individual doctoral student has supervisors who come from two (occasionally more) distinct disciplinary areas. Such practices seem as wide-spread in the humanities and commerce as they are in the sciences, and cross-faculty combinations are not rare. Obvious examples are the interface between economics and climate science in the study of climate change, or the interface of neuro-science and linguistics in neurolinguistics. However, the term is also used to label areas of study such as comparative literature, and social studies which fall somewhere between anthropology and sociology. Some fields, such as gender studies, seem to be inherently interdisciplinary, calling on insights from sociology, history, cultural studies, education, psychology, biology, and so on. In areas like these, there are already staff whose own work is interdisciplinary, and then it may not even be necessary to have supervisors from distinct fields leading the research. In some of the instances that may be subsumed under this type of interaction, the 'interdisciplinarity' may involve no more than consulting with someone from a different disciplinary background, though it seems useful not to include this as 'interdisciplinary study'.

A next stage in the engagement with interdisciplinarity involves explicit teaching (either official coursework or research seminars) from the various disciplines which come together in a particular research area: e.g. from sociology, history, psychology, biology etc. in gender studies. This recognises the realities of the traditional disciplines, and attempts to overcome the restricting forces they may apply to a body of students.

A third level is where individual staff members from different disciplines already have a joint research programme to which doctoral students can make a contribution. It seems that sometimes the students belong to just one of the disciplines, in other cases the students may themselves be working at the interface of the disciplines.

A final stage is where the institution has specifically set up some kind of research centre whose entire focus is interdisciplinary. Materials Science seems to come into this category fairly often; Mercer University has a Center for Translational Studies in Alzheimer's, Parkinson's, and Neurodegenerative Disease; VU, Amsterdam, has various such centres. Here students are in a framework where input from several traditional disciplines is required for all of them, and where that material is taught across the board, apparently specifically tailored for students working at the relevant interface.

It seems likely that all of these various types are already in place at Victoria. It is not clear that we wish to define any one of these (or any subset of these) as being interdisciplinary at the expense of the others. Whether any of these models is appropriate may depend on the particular project being undertaken by the student.

While there are academic works on what interdisciplinarity means, these do not appear to be reflected in the websites of the individual universities that claim to have interdisciplinary programmes. It may or may not be helpful to consider such definitions as the following (from the US National Institutes of Health)

“Like multidisciplinary research, interdisciplinary research brings together different disciplines to address a particular issue. But unlike multidisciplinary research, interdisciplinary research takes bits and pieces from the contributing disciplines and integrates them in ways that produce a new conceptual framework.”

If we accept that definition, much of what happens under the label of *interdisciplinarity* is actually multidisciplinary. It is not clear whether that matters. Similarly, it appears that the term *transdisciplinary* is sometimes reserved for a much greater degree of integration, and going beyond the boundaries of the traditional disciplines, or even rejecting the notion of traditional disciplines. *Interdisciplinarity* seems like a fairly widely accepted and relatively neutral term which can cover all of these shades of interaction.

As well as considering these various shades of interdisciplinarity, we must also consider the aspect of the work which is interdisciplinary. At least three aspects can be distinguished here:

- Subject matter
- Methodology
- World-view

The examples that have been cited above deal largely with interdisciplinarity of subject matter. We need to recognise and support work which is interdisciplinary for these other reasons as well. The use of methodology from another area is all too frequently ignored. One example would be the use of oral histories within fields of social studies. Another would be the adoption of participant observation in areas outside Anthropology. Differences of world-view are very familiar from studies that have a Maori or Pasifika dimension, and from C.P. Snow's *The Two Cultures*.

## **Guidelines**

In the light of this discussion, Victoria University has approved the following guidelines for interdisciplinary study at research degree level.

### **Academic Issues**

1. Victoria University supports interdisciplinary studies in a number of ways – as discussed above – and does not view interdisciplinarity in itself as being either a reason for accepting or rejecting any particular research proposal. Staff and managers need to be aware of the possibility and the problems of interdisciplinary approaches to research questions, and be open to solving them.
2. Heads of Schools need to develop pathways by which potential supervisors in different schools can communicate with each other in order to facilitate joint supervision. Not only should this be a possibility, it should be normal for one School to discuss joint supervision with another, whether or not in the same Faculty. Rather than taking on students with whose projects staff have a superficial acquaintance, they should be considering joint supervision to cover gaps in their knowledge as a matter of course.
3. For PhD study, the regulations allow the use of coursework up to 60 points to fill some gaps in a student's background, and this can be used to cover some aspects of interdisciplinary topics.
4. While it is incumbent upon potential supervisors to be open to the possibility of interdisciplinary work, it is also incumbent upon students not to insist on interdisciplinary topics which cannot be feasibly supervised or where the student does not have the background knowledge; students should pay attention to the advice of supervisors on this, as on other, academic topics.

### **Administrative Issues**

We acknowledge that there may be administrative problems, and the University should ensure that these are addressed and do not cause barriers to good administrative work.

1. Where students wish to undertake interdisciplinary studies at Victoria and these studies can be accommodated by the University, there must be ways of sharing costs and income generated by the student that reflects the input made by different supervisors, whether they are officially employed within the same Faculty or not. See the Financial Guidelines below.
2. Equally, where interdisciplinary work requires the input of people from external bodies such as CRIs or Te Papa, guidelines should be available to Heads of School on how to deal with the financial side of such arrangements.
3. Similar arrangements should be in place to allow consultation between research students and academics from other Schools. Where brief consultation is all that is required, this is best dealt with on an informal basis. Payments should not be made for consultations of 1-2 hours, but more time-consuming commitments should be recognised.
4. The FGR will send application forms from PhD students who indicate that they might want to do something interdisciplinary to both (or all) of the Schools involved. But the FGR cannot hold the discussions about joint supervision or other approaches to providing the student with what is required. Only the Schools can do this.

## **Finance**

Funding from research degrees comes from 3 streams: tuition fees, government subsidies and completion funding.

### **Annual Revenue**

#### *Government subsidies*

Government subsidies form part of the University's Investment Plan. Schools negotiate their investment plans with the Faculties. The Government subsidy for PGR students is part of this negotiation and at present there is no plan to change this process.

#### *Tuition Fees - Splits between schools/programmes/faculties*

If supervision for research degrees is spread across more than one funding centre, the heads of the centres can agree on the proportion of the tuition fees that should go to each.

Heads of School receive a request every year from the Management Information Unit, to advise the appropriate proportion of tuition fees to be shared between schools based on the supervisor split in the workload model (current practice). The Management Information Unit then sends a report to Central Finance who will split the tuition fee accordingly between the appropriate schools.

### **Payments to external persons**

It is common for Honorary Research Associates (HRAs) to be appointed to undertake some supervision. As the name suggests, in most cases these people are not paid. However, schools/programmes/faculties may make arrangements to pay these people, provided that

- The payment is a lump sum for the supervision provided, and not calculated on an hourly rate.
- People who are undertaking the supervision as part of their work for another institution, using the facilities and the time of that institution, are not paid.
- Arrangements are reviewed annually or more frequently.

## **Payments to external institutions**

Where HRAs are appointed from external institutions, a payment may be made to that institution. Note, in November 2009 the NZVCC resolved that “Other than in exceptional circumstances universities will not be required to pay supervisors employed by other New Zealand universities”. However, at least the following questions should be taken into account:

- Is the external institution getting work done cheaply by having a research student undertake it?
- Who is paying for equipment and operating costs?
- Who is paying for space and computer facilities?
- Who retains control of any IP? An agreement in compliance with Victoria University Policy should be in place to cover this.
- Is any payment from the completion funding going to the external contractor (see below)?
- What is the actual amount of completion funding being retained by the School?
- Provision of scholarship to the student: who pays this?

The provisos listed for payments to external persons also apply when payments are made to external institutions.

## **Completion funding**

Completion funding currently goes to the School in which the candidate is enrolled. Completion funding can be split between schools/programmes/faculties. An agreement must be reached between the people responsible in each of the units. The Heads of School will use the Management Information Unit's figures (see above) as a starting point for their discussions (these will be provided to them by the Faculty of Graduate Research (FGR) in January or February each year).

*One* overall completion split will be agreed to and signed off by the Heads of School. Once the FGR has all the documentation from Heads of School, a report will be sent to Central Finance.

Schools will receive the appropriate funding over the 2-5 year time-frame in which PBRF funds are distributed. The new process will begin in January 2012 with interdisciplinary degree completions from 2011.

Such an agreement must be signed by the people responsible in each of the units (typically the Heads of Schools). Where such agreements are made, it is the expectation that they will be based on a reasonable evaluation of the costs incurred and incentives involved in providing for interdisciplinary PhDs.

Costs that may be taken into consideration include:

- Supervision (salary, etc)
- MRA (accommodation, computing, office supplies)
- Research grants under the MRA or other School fund
- Research equipment, etc
- School/programme overhead (costs of running a PhD programme, e.g. admin support and general school overheads).

- Risk involved in the loss of completion funding if a candidate does not complete (home school bears this risk, and may consequently bear some extra costs during the candidacy to assist or support a candidate).

Based on an analysis done in one school, supervision costs accounted for less than one-third of total costs. Thus, depending on a School's funding category, the numbers of students in the programme, etc, it will not always be the case that completion funding should be split in the same proportion as tuition fees are during candidacy. Indeed, a School may actually require completion funding to compensate for the fact that retained tuition funding may not cover actual costs. Schools/programmes are encouraged to estimate and track their actual average costs per PhD completion in order to be well informed for completion funding negotiations.

No completion funding may be paid to external individuals, though external individuals may be paid more than their percentage of the supervision might suggest, as payment in lieu.

### **Splitting completion funding with external institutions**

Normally, it is expected that external institutions taking on the supervision of research students will do so because there is advantage to them in doing so, and that they will not require any share of the completion funding, which is the government's way of funding the University for research.

However, it may be that some part of the completion funding may be paid to external institutions. Any such agreement should take into account the factors listed above. An agreement would have to be reached at the beginning of the period of supervision, but the actual percentage amount would not be determined until the end of the supervision (see discussion above, for division between schools/programmes/faculties).

Where an overarching agreement has been reached between the external institution and Victoria on the division of completion funding, that agreement will determine any division of such income.