

**ESDF Project 2004**  
**More than doubling the benefit. Promoting**  
**transdisciplinarity in double degrees.**  
**Final report**

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## Summary

Double degree programs are an important element of Australian Universities' undergraduate offerings. They not only represent a significant proportion of enrolments (for the University of Wollongong, they currently account for approximately 8%); but also attract high quality students - not only academically strong, but also enthusiastic about learning. They also seem to attract female students, including into non-traditional areas. We believe that there are opportunities to increase double degree enrolments, and to extend them to new groups such as international students, who currently represent only 1% of double degree students. We also believe there are opportunities to improve the experience of double degree students. Our research has indicated that experiences are currently mixed, and sometimes quite negative, which may be having detrimental effects on the University's reputation. Most Australian universities offer double degrees, and yet few have invested in their development. A strong double degree program could be a feature distinguishing a university like UoW.

We also regard double degrees as an important and exciting opportunity to develop an area of university education that is increasingly called for in contemporary society - transdisciplinarity. Transdisciplinary approaches are those that transgress disciplinary boundaries; to integrate knowledge and methods, to draw on and synthesise various disciplines in approaching complex problems and issues, to interact and communicate with multiple disciplinary academics and non-academics, to bring university knowledge to an increasingly educated public and to apply university knowledge to the problems and needs of the community. Where double degree students currently integrate their knowledge and skills largely on their own and often by accident, there are various initiatives that could develop this aspect of their education, increasing their effectiveness and contribution in a range of careers.

The initiatives we recommend are:

- **Support and information**
  - a double degree **handbook** (see Appendix) and **website** with information and links (and opportunities to communicate)
  - a double degree **coordinator/professional officer/mediator** to give information and support, develop initiatives, arrange meetings and events, liaise with Faculties and the University
- **Recognition**
  - **scholarships/awards** for double degree students (perhaps one scholarship, one award in the first instance).
- **Community**
  - Meetings and communication could be organised via the website and/or the mediator.

- **A new subject**
  - **Transdisciplinary subject (see Appendix)** - a skills-based course covering synthesis of knowledge from different areas, application to 'real world' problems, teamwork and communication of knowledge across disciplinary boundaries
- **cross-faculty further studies**
  - establishment of a **cross-faculty Honours program** with guidelines for co-supervision, resourcing and assessment. The student would need to be based in one of the faculties, but would interact with both.
  - formal arrangements for **cross-faculty postgraduate degrees**, with guidelines for co-supervision, financial support, space and facilities and examination

## Background

Double (or combined) degrees are available at most Australian universities. A program of double degrees began at UoW in 1983 and was boosted by the introduction of the Bachelor of Laws double degree program in 1991, which required that a second degree be completed to graduate in Law<sup>1</sup>. Enrolment in double degrees increased on average 20 % each year during the 1990s before levelling off in the last few years. Double degree enrolments currently represent around 8% of the student body in 30 different degree combinations (Table 1). Interestingly, there are significantly more women doing double degrees than men<sup>2</sup>, and this difference extends across the range of discipline areas. There are very few international students taking double degrees<sup>3</sup>.

**Table I - Enrolments in double degrees at the University of Wollongong in 2005.**

<b>Double degree combination</b>	<b>Total enrolled in 05</b>	<b>Starting in 05</b>
B Arts - B Commerce	169	44
B Arts - B Laws	265	65
B Commerce - B Laws	248	55
B Communication & Media Studies - B Arts	43	21
B Communication & Media Studies - B Commerce	18	11
B Communication & Media Studies - B Creative Arts	24	12
B Communication & Media Studies - B Laws	46	27
B Communication & Media Studies - B Science	2	0
B Computer Science - B Laws	9	1
B Computer Science - B Science	6	1
B Creative Arts - B Arts	71	20
B Creative Arts - B Commerce	23	7
B Creative Arts - B Computer Science	11	5
B Creative Arts - B Laws	16	5
B Creative Arts - B Science	10	4
B Engineering - B Arts	10	3
B Engineering - B Computer Science	4	1
B Engineering - B Laws	10	2
B Engineering - B Mathematics	12	4
B Engineering - B Science	42	12
B Engineering - B Commerce	57	12
B Information and CT - B Laws	15	0

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<sup>1</sup> Recently, a single Bachelor of Laws has been introduced for graduate students.

<sup>2</sup> 60% of double degree students are women.

<sup>3</sup> 1% of double degree students are international students.

B Mathematics - B Laws	7	3
B Mathematics - B Computer Science	16	1
B Medical Science - B Commerce	22	5
B Medical Science - B Laws	9	5
B Psychology - B Commerce	23	6
B Science - B Arts	31	6
B Science - B Commerce	90	22
B Science - B Laws	32	6
B Science - B Mathematics	5	2
TOTAL	1346	368

Double degrees allow students to complete two degrees in less than double the time it would take to complete a single degree. Even with this 'discount', double degrees represent a significant commitment by students who face more years at University and the challenges associated with studying in two discipline areas simultaneously. Higher entrance requirements mean that double degree students are generally strong students. They are also enrolled as undergraduates for longer. Some academics see double degrees as representing an alternative to a single degree plus Honours or Masters, and as potentially steering students away from postgraduate enrolment. It appears that a higher proportion of double degree students enrol in a postgraduate course<sup>4</sup>, however, which probably reflects the strength of these students. At a time when universities compete for strong student enrolments and when students with university degrees compete for jobs and careers, double degrees are clearly an important area of university education, one that has been given relatively little consideration to date.

This research considered the experience of former and current double degree students at the University of Wollongong, including why they chose a double degree, whether their experience was a positive one, to what extent they were supported by the University and what they went on to do with their education. More broadly, the research sought to consider double degrees in the context of wider changes and demands on higher education in contemporary society, and to consider whether double degrees represent an opportunity to provide graduate skills appropriate to these demands and changes. This broader aim was associated with ongoing research into transdisciplinarity in universities.

Transdisciplinarity (TD) has received increasing attention as a new mode of knowledge production within universities and other 'knowledge organisations' (it is synonymous with the Mode 2 knowledge production described by Gibbons et al, 1994). Rather than simply bringing scholars from different disciplines together (multidisciplinarity) or working at the intersection of two or more disciplines (interdisciplinarity), TD approaches transgress and transcend disciplinary boundaries. They are characterised as problem-focussed; they generally involve not only the synthesis of methods and

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<sup>4</sup> On average, 36% of double degree students starting between 1995 and 2000 went on to enrol in postgraduate courses, whereas only 22% of single degree students from the same period enrolled as postgraduates.

ideas from different disciplines, but the evolution of methods and frameworks appropriate to a particular problem; and they generally involve collaboration, between transdisciplinary researchers, disciplinary researchers and others outside the university.

There are increasing calls for TD approaches in response to environmental and social problems and demands. Such new and responsive approaches are also regarded as important assets within the knowledge economy. However, the development of and education for TD within universities is constrained by their disciplinary structure. In this sense, universities can be regarded as being 'behind the eight ball', particularly in preparing graduates for a society that increasingly requires TD knowledge and skills. In this context, double degrees, and their potential for integration of disciplines, can be seen as an important opportunity for universities and for society generally.

This research therefore also sought to investigate TD, in terms of its characteristics and quality, its desirability within contemporary society, and its requirements in terms of the education of undergraduates. In this investigation, we sought to consider how the development of double degrees could contribute to problem solving in contemporary society, and how the demands of contemporary society might create a demand for double degrees.

## Methods

The research involved an extensive review of the significant body of literature on TD, both academic literature on the theory and practice of TD, and policy documents highlighting the imperative for this new approach. This part of the research involved researchers already operating in a TD mode (Russell and Wickson - Biology/Science, Technology and Society; Carew - Engineering/Education) and the literature review was combined with insights from our own experiences conducting TD research. We found very little written explicitly about double degrees.

The investigation of the experiences of former and current double degree students revolved around a two-stage survey procedure. A preliminary qualitative survey involving broad, open questions was used to identify common concerns and issues for these students. The questionnaire was sent by email to a selected group of current double degree students from a range of degree combinations. The questionnaire was also sent to past double degree students, including current postgraduates at the University of Wollongong (not all of these had done their double degree at Wollongong) and University of Wollongong alumni who had completed a double degree. Respondents included 15 current students and 18 past students (7 Alumni and 11 postgraduates).

The questionnaire responses were coded using NuDist v4 qualitative research software and the coding used to develop categories for a quantitative survey. A larger, web-based, quantitative questionnaire was then used to establish the importance of these concerns and to look for patterns associated with different degree combinations and other identifiers such as gender. This web-based survey was presented to current and past students via an email requesting their participation and including a link to the website of the survey and a password (to prohibit accidental respondents).

This email was sent to all current double degree students on campus (1344 students), all past students on the Alumni list with email addresses (350) and to all postgraduates via the email list (unfortunately, the request was sent as part of a newsletter by the list moderator, which affected the number of respondents). 453 current students and 95 past students responded to the survey.

Semi-structured interviews were also held with 10 double degree students (past and current) to learn more of their experiences and to gather information for profiles for a double degree handbook.

## Results and Discussion

### ***What is transdisciplinarity?***

Our review of the literature on TD knowledge production revealed a lack of consensus about the nature and characteristics of this approach. Our synthesis of this literature has identified three characteristic features of TD: problem focus, evolving methodology and collaboration (Wickson et al. 2006). Thus, TD work centres on a problem rather than on a discipline area; in approaching this problem it draws on different areas of knowledge and different methods, bringing these to the problem in an evolving way; and it brings scholars and other stakeholders into collaboration in the investigation and solution of the problem. This work also highlighted some of the quandaries and challenges facing TD researchers including integration - of different areas of knowledge, of theory and practice, and of researchers in the context of the research; reflection - the critical appraisal of each area of knowledge from the perspective of other areas and self-reflection by the researcher; and paradox - reconciling the inevitable tensions that arise in bringing different epistemologies together.

While TD clearly has considerable potential for the investigation of complex and multidimensional issues that increasingly demand our attention, there are considerable obstacles for TD research and teaching, mostly stemming from the disciplinary structure of universities (Russell 2005). These include obstacles for TD researchers in recruitment to faculty positions, the assessment of grant applications, the review of journal articles and access to resources and space, all of which tend to be organised along disciplinary lines. Similar obstacles exist for postgraduate research students operating in this mode. For undergraduate education, the disciplinary structure of courses and degrees creates even more intractable obstacles to the introduction of TD content or skills instruction.

One major issue for TD research and teaching in universities is the assessment of quality. The unique characteristics and emergent properties of TD research mean that it has new qualities that may not be recognised, and at the same time may not meet recognised disciplinary standards. In response to this problem we have developed sets of evaluative criteria for quality TD (Wickson et al. 2006). The first set is aimed at researchers who seek to evaluate and improve their own work. These criteria are also potentially useful in recognising the quality of TD student work.

- How was the research problem formulated?
- What is the relationship between methodology and the problem context? How have competing epistemologies been reconciled?

- How has collaboration featured in the project?
- How well have knots of communication between different bodies of knowledge been created? Is the weave informative, useful, compelling?
- Does the research acknowledge, resolve and/or accommodate paradox?
- Has the researcher reflected on, recognised or accounted for the limitations and subjectivities of their approach and project outcomes?

A second set was developed for institutions and bodies that seek to evaluate and compare the performance of TD researchers/projects (see Appendix A).

### ***The shifting landscape of knowledge production in contemporary society***

Transdisciplinarity (TD<sup>5</sup>) is arguably not a new practice, and there have been a number of internal (within university) drivers for the development of TD approaches, including creative activity at disciplinary margins, tensions created by disciplinary inertia, unions of disparate disciplines around new problems or industries, and collaborations based on newly-developed equipment and techniques. Historically, external drivers, such as the imperative for universities to contribute to national military goals, have also pushed for TD kinds of approaches. However, there seems to have been a recent increase in interest in TD and cross-disciplinary approaches generally and we sought to investigate the origins of this increased interest within the broader context of contemporary society.

Based on this aspect of our research, we argue that a shifting landscape of knowledge production has emerged over the last few decades, which calls for organisations such as universities to change the way they produce and use knowledge (Russell et al. 2006). This shift was described by Gibbons, Nowotny and co-workers, in an influential book published in 1994, in which they described a new approach to knowledge production, Mode 2 (synonymous with a transdisciplinary approach), which they suggested was in the ascendancy, particularly in business and industry. We identify three aspects of the shifting knowledge production context, representing economic, environmental and social dimensions, that are currently important drivers for the development of TD. These are:

- the knowledge economy - in which knowledge is seen for its potential contributions to national and international economies in reshaping and adding value to existing industries, and in creating new 'knowledge intensive' industries and commercial activities;
- the environmental imperative - in which an acknowledgement of the value of the environment and a recognition of environmental degradation caused by human impacts demand new approaches and new knowledge directed at solving complex global problems;
- the engaged populace - in which an increasing proportion of the population, educated and empowered to find and use knowledge and information, creates a more complex and socially distributed context for knowledge production and use.

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<sup>5</sup> TD is used as an acronym for both transdisciplinarity and transdisciplinary.



We have considered the ways in which these drivers potentially shape the practice of TD, and contradictory tendencies when these different drivers operate together. Our analysis leads us to caution against institutionalising and consolidating tendencies, particularly those that contribute to the commodification of knowledge, because they ultimately threaten TD and knowledge production generally. We suggest that in order to avoid and remedy these tendencies, universities should focus on the development of *capacity*, for flexible knowledge production generally, and for TD specifically, rather than treating knowledge as capital, to be accumulated and commercialised. The development of capacity, including capacity for problem-based, evolving, collaborative TD research and scholarship, will allow universities to make their greatest contribution to the wider community and to the problems of contemporary life, to maintain the flexibility to respond to new problems and priorities, and to maintain relevance and support within the shifting knowledge landscape.

### ***Educating for transdisciplinarity***

Having identified a growing demand for universities to adopt capacity in TD approaches, and with a clear definition of transdisciplinary practice, and criteria with which to judge its quality, we could begin to consider an important aspect of TD practice that has been little researched, transdisciplinary education. With the structuring of tertiary (and indeed secondary) education based around established disciplines, short of a radical restructuring of universities, there seem to be few opportunities for students to learn to operate in TD ways. This is where double degrees may provide an important avenue, within the current disciplinary structure, for students to pick up the skills of crossing disciplinary boundaries and communicating between them. It seemed important first to elaborate on the kinds of skills required.

We identify groups of skills necessary to building transdisciplinary capacity, of individuals and organisations, as including the following:

- Learning - the ability to build up new knowledge, to learn from others and teach others, to find and recognise reliable sources of information, to integrate different types of knowledge and to critically evaluate knowledge
- Communication - the ability to bridge disciplinary languages and cultures, to translate knowledge for different audiences, including those outside the university and to synthesise new or common languages
- Teamwork and management - the ability to collaborate within and between disciplines, to deliberate and negotiate with collaborators to achieve mutually agreeable outcomes, to achieve and be open about consensual difference (to agree to disagree), to resolve conflict, to be transparent about expectations & interests and to communicate outcomes to affected people
- Problem solving - the ability to adapt and apply knowledge and methods to new situations and to use knowledge and skills to solve problems

- Ethics - the ability to critically reflect, including self reflection, to evaluate & select problems, to respect difference, to be transparent and accountable, to reduce conflicts of interest and to be aware of and strive for public good

In proposing the development of these skills within the university, we note that they are not only central to TD; many of them are valuable skills for all graduates and are represented by the University's articulation of Graduate Attributes. In this context, double degrees may provide a unique opportunity to develop these skills and improve both the employability of graduates and their contributions upon graduation. Despite this important opportunity, our impression when initiating this project was that there has been a relatively weak commitment from Faculties and from the University as a whole to the development of double degree programs and to support for double degree students, largely based on the fact that they do not fit neatly into the disciplinary structure of the University (UoW is certainly not alone in this).

Our investigation of the experiences of double degree students reveals considerable dissatisfaction and disillusion (see below). An investigation of completion rates for single and double degrees indicates that while completion rates for single degrees have been running at between 50 and 60% since the early 90s, the number of completions of double degrees have been decreasing at an alarming rate<sup>6</sup>. These data rely on relatively small sample numbers and include students who are switching to single degrees rather than dropping out altogether. More recent data suggest that, when numbers switching out of double degrees is compared to numbers switching into them, a net figure of about 4% of the starting enrolment switch to single degrees each year. This 'switching' may effectively represent dropping out of one of the degrees and settling for the other. In any case, it suggests a serious problem, for individual students who do not successfully complete their chosen degree, and for the University in offering double degrees.

We see this problem as reflecting on the University's responsibility to this group of students, but also as a wasted opportunity. This and our discussions with double degree students suggest that investing in double degree programs that are more positive, supportive and tailored to student needs may attract more quality students and improve the University's enrolments and reputation. If the University is able to market itself as offering a quality double degree program, it may create new opportunities, including for international students. The development of double degree programs that cater for the development of TD skills and capacity will also create a group of students who are positioned to make important contributions in the shifting landscape of contemporary society and in passing on their skills and insights, to bring the University into line with this contemporary context.

### ***Experiences of double degree students***

Surveys of past and present double degree students sought information about students' experiences and expectations of double degrees. We wanted to see whether their expectations when entering were

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<sup>6</sup> Based on data from 1991 to 2000 (students enrolling in later years are not expected to have completed), the number of completions dropped by, on average, 5% a year to about 35%.

met during their degrees, and also after graduating and entering the workforce. Predictably, the majority chose to enrol in a double degree to increase their employment opportunities and many saw this as the main benefit. They also saw a double degree as an opportunity to acquire more skills, to explore different areas and to receive a broader education. Some double degree candidates chose a double degree to keep their options open if undecided about their chosen field. Some were attracted by the challenge. Yet even amongst those students who chose a double degree merely 'out of interest', many were also influenced, or at least affirmed, by the (perceived) improved career prospects. Double degrees seemed to them to open up novel career paths and ways in which they could be distinguished from single degree students<sup>7</sup>.

When considering what happens to double degree students, we were limited to a sample of 95 past double degree students (from UoW and elsewhere). Of these, 73% were employed, 61% of them full-time, with the majority in professional (30%), government (23%), or business/industry positions (20%). A small percentage were involved in academic or research work (4%). A significant proportion had gone on to do postgraduate or further study (21%) and 5% were unemployed. When these past students were asked what the advantages of a double degree were, just over half felt that it had made them more competitive for a job and that the skills had been useful at work. However, more than 80% felt that the double degree had broadened their knowledge/perspective. Compared to their prior expectations, this suggests that either the students were disappointed with the extent to which the degree had contributed to their employment prospects, or they had come to value a broader education more highly (or both).

When asked generally about things they like/d about a double degree, as well as a broader base of knowledge and career/work opportunities, students mentioned diverse skills, perspectives and ideas, and opportunities to transfer knowledge and skills between disciplines as positive aspects. A majority also liked the degree because it was interesting and challenging. Fewer students chose the linking/integration of disciplines, the clarification of goals and interests and diverse social interactions as things they liked.

When asked what they disliked about the degree, many students commented on problems with timetables and course structure and differing expectations between Faculties. Interestingly, less than half included the long duration and heavy workload as things they disliked. Other things that some students selected were a lack of administrative and educational support, a lack of integration between disciplines, a lack of recognition for achievements, lack of a social group and a sense of not belonging. While most of us will complain when prompted, the extent to which these problems affected individual students was more apparent in qualitative responses and interviews. Students expressed frustration and dissatisfaction, some felt that their performance had been adversely

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<sup>7</sup> For those students who had to do a double degree (Law students), a significant proportion did not include 'I had to take a double degree' as one of their main reasons, suggesting that they may have taken a double degree anyway.

affected and many had considered or were considering dropping the double degree. These negative aspects are discussed in more detail below.

Each Unit/Faculty goes to considerable trouble to structure courses and timetables in line with the degrees they offer. The University now has a sophisticated timetabling system to accommodate the various degrees on campus. Unfortunately, little consideration is given in these processes to double degrees. Class clashes, long days, multiple assignments due at the same time and overlapping exam timetables are all problems encountered by double degree students. Arguably, taking the various double degree combinations into consideration in structuring and scheduling courses would not be feasible or even possible, for Units or for the University as a whole. However, this remains one of the most significant problems in the offering of double degrees. Particularly when timetabling or course structuring problems extend the time required for a double degree, when they affect student performance or when they become so intractable that students abandon their double degree, there must be an onus on the University to seek some remedy or to at least inform students that these problems exist.

Double degree students described a lack of support during their degrees. This included a lack of administrative support and information, with few Faculties giving students accurate information about double degree structure and rules or guidance about their decisions; but also a lack of academic support, both in a failure to encourage and recognise their achievements and in more subtle failure to accept them because of their divided loyalty between disciplines. In general, in an environment in which discipline is an important part of identity, double degree students may experience a sense of not belonging. This is exacerbated by lack of a stable peer group throughout their degrees.

Failure to recognise the achievements of double degree students adds insult to injury. Double degree students are often not eligible (officially or effectively by virtue of their course structure) for scholarships, entry into advanced programs, merit lists and awards offered to single degree students. This again reflects the disciplinary basis for the awarding of academic recognition. In addition to a lack of recognition for performance within their disciplines, the unique achievements of double degree students in studying two disciplines, in the face of academic challenges and a lack of support, are not acknowledged. Again, this not only affects the experience of a double degree, and provides a disincentive to continue, it also fails to promote the unique and important benefits of crossing disciplines.

When asked about integrating their discipline areas, some of the students had succeeded in integrating the knowledge from the two degrees, often around themes of particular interest to them, for example, feminism (Law & Arts), a particular language or culture (Arts & Creative Arts), opera (Creative Arts & Science). Some clearly had not found opportunities for such integration. More commonly, the skills from each degree had been integrated and had complemented the requirements of the other, although this kind of integration sometimes led to problems with different standards and conventions in different faculties. There was a fairly consistent message that there had been little support for such integration and little recognition when it happened. It was very much student-driven. Students were enthusiastic about opportunities for more integration (although this was at times qualified by concerns that disciplines maintain their integrity).

## Recommendations

This research has highlighted the changing environment of universities, and new demands for knowledge and education adapted to this environment. In research, these demands call for the new levels of communication, collaboration and problem solving provided by transdisciplinary approaches, which complement existing disciplinary approaches. In education, the higher level attributes such as teamwork, communication across disciplinary boundaries, and synthesis of knowledge from different sources not only prepare students for transdisciplinary scholarship, but also for a range of jobs.

In this context, we see the need for avenues within the University for transdisciplinary education. The most obvious avenue within the existing disciplinary structure is the double degree. While this avenue limits these opportunities to a relatively small group at the University, it is a group well suited to the challenge - strong students who are already committed to a broad, multiperspective education. In any case, it seems clear the TD approaches require, and complement, disciplinary approaches. So for TD approaches to operate effectively in a university, there need only be a proportion of scholars who can operate in this mode. Creating a special role and niche for the double degree program may also see its popularity increase.

Our research has also highlighted some entrenched problems for double degree students. Some of these problems, particularly timetable and course structure problems, are inherent in the program, and there is probably little that can be done about them. However, they are exacerbated by the lack of support and recognition. Investing in development of the double degree program would not only provide mechanisms of support for the students, it would also make them feel more supported and valued. It would also tend to validate double degrees in the eyes of Faculty staff, who might be a little less resistant to helping these students. Investing in the program may also attract more enrolments, including of international students and the double degree program may provide a mechanism to improve the representation of equity groups, particularly women, and to promote diversity generally.

We suggest that investment in the double degree program should take the following forms:

### ***Support and information***

We suggest that double degree students should be provided with a **handbook**, such as the one we have prepared. This could be mirrored by a **website** with links to relevant university pages and to external sites such as career sites. The website might also give double degree students the opportunity to communicate.

A suggestion made by a number of double degree students and one we endorse is to have a double degree **coordinator/professional officer/mediator**; a person employed to deal specifically with double degrees, to give information and support for students, to develop initiatives and arrange meetings and events, to liaise with Faculties and to feedback to the university about issues and problems.

## ***Recognition***

It seems necessary that rules for scholarships, merit programs and awards be reviewed for consistency in relation to double degrees. In addition, we think the University should consider establishing a number of special **scholarships/awards** for double degree students (perhaps one scholarship, one award in the first instance). This would recognise their efforts in coping with the challenges of a double degree but also the emergent skills they have developed in working in and across different disciplines. A double degree award should require high performance in both degrees. Double degree students would also appreciate more recognition at graduation and could perhaps form a separate group at each graduation ceremony.

## ***Community***

Double degree students would appreciate meeting one another, to exchange information and experiences, but also to compensate for problems in establishing a peer group within their subjects. Meetings and communication could be organised via the website and/or the mediator.

All of the measures above, which will serve to highlight the importance of the double degree within the University, will tend to give double degree students more identity and community, and are likely to improve their satisfaction and performance. They may also lead to double degree students integrating their knowledge more, when they value their degree more and strive to do well in both areas, when they meet and discuss their subjects with students from diverse double degree combinations. However, while supporting the program and providing such opportunities is an important start, there need to be educational initiatives to genuinely promote transdisciplinary skills.

## ***A new subject***

We have put together a proposal for a **transdisciplinary subject (Appendix B)**. The subject is unusual in a number of ways, not least because it is a skills-based course without prescribed content. While this will make it challenging to teach and to study, it makes it possible for a single teacher (albeit a talented one) to take a group of students from a range of double degree combinations. Because the important TD skills include synthesising knowledge from different areas, applying it to 'real world' problems, and communicating knowledge across disciplinary boundaries, the students will have to develop these skills for the subject to work.

## ***Cross-faculty further studies***

One of the frustrations of double degree students who do manage to successfully integrate their fields of study is the need to then choose between them in moving on to **postgraduate study**. The Law Faculty is the only Faculty that we are aware of that accommodates joint (cross-faculty) Honours. We recommend that the University consider establishing a **cross-faculty Honours**

**program.** This would require a set of guidelines with regard to co-supervision, resourcing and assessment. The student would need to be based in one of the faculties, but would interact with both. We recognise concerns about academic standards and their maintenance in different disciplines. However, we contend, once again, that true transdisciplinary scholarship is such that it is transferable and communicable across disciplinary boundaries. Therefore, while it would be desirable to use criteria that reflect the emergent qualities of transdisciplinary work, cross-faculty Honours work should be able to be assessed by staff from both faculties.

While cross-faculty PhD and Masters are possible and there have been some examples (where students have co-supervisors from different faculties), the administrative arrangements for these are not well developed. We recommend that the University put in place a formal arrangement for cross-faculty postgraduates, with guidelines in relation to supervision, financial support, space and facilities, and examination.

### ***Further research***

We are continuing our research on transdisciplinarity. If any of the proposed double degree initiatives are taken up by the University, an evaluation should be conducted using methods similar to this project (the same web-based survey could be used). We have provided a set of profiles for use in handbooks and other materials, but more could be conducted (there are several high profile double degree graduates, including the NSW Member for Kiama).

The aspect of the research that was not completed within this project, but would add significantly to our understanding of the prospects of double degree students, is an investigation of employers' views. This could involve interviews or focus groups with local employers, leading to the development of a survey that could be distributed via one of the national employers networks. I found David Williams and Martin Smith to be extremely useful and helpful contacts who would, I am sure, assist and support such further research. An additional benefit of this research would be career information for the handbook/website.

## **Publications**

A.W. Russell (2005) No academic borders? Transdisciplinarity in university teaching and research. *Australian Universities Review* 48 (1) 35-41

F. Wickson, A.L Carew and A.W. Russell (submitted) Transdisciplinary Research: characteristics, quandaries and quality. *Futures*

A.W. Russell, F. Wickson and A.L Carew (in revision) Transdisciplinarity: context, contradictions and capacity. *Minerva*

A.W. Russell, S. Dolnicar and M. Ayoub (in preparation) Double degrees: double the trouble or twice the return? *Studies in Higher Education?*

## Budget

### Account 262040500

Item	Amount
Salaries (teaching relief) 2004	\$1,934.25
Salaries (research assistance) 2004	\$1,501.27
Salaries (teaching relief) 2005	\$770.20
Salaries (research assistance) 2005	\$7,439.75
Book vouchers	\$150.00
Web design expenses	\$454.55
Nvivo training workshop registration	\$725.00
Materials, postage etc	\$90.27
<b>Total</b>	<b>\$13,065.29</b>

## Appendices

- A. Transdisciplinary quality criteria
- B. Transdisciplinary subject proposal
- C. Double degree handbook