

## Title *Approaches to teaching IA in Australian Universities*

Authors Beverley Clarke\*, Garry Middle, Lex Brown, Daniel Franks, Elizabeth Harris, Jon Kellert, Angus Morrison-Sunders

\*Contact Author: Flinders University, South Australia, [Beverley.clarke@flinders.edu.au](mailto:Beverley.clarke@flinders.edu.au)

### **Introduction**

In November 2012 a special symposium was held in Canberra, Australia, that brought together for the first time several Australian academics who research and teach impact assessment (IA). A number of initiatives of a similar nature but conducted in other countries is documented by Sanchez and Morrison-Saunders (2010) and Fischer et al (2010). An analysis of Australian universities approaches to teaching was last conducted in 1992 (Thompson 1992 cited in Sanchez and Morrison-Saunders 2010). This paper makes a contribution to the dearth of information about *how* IA is taught, building on the special Australian symposium. A key conclusion of the symposium was that the way IA is taught varied from University to University, although there were some common key core areas and concepts covered. Whilst many universities have undergraduate and post graduate units in IA, most focus on environmental impacts assessment (EIA). There is little uniformity as to the school within which these units are taught: schools running units in IA are in Environment, Humanities, the Built Environment and Mining. Further, the background of those who teach IA varies widely from primarily academic, to strongly IA practice, and those with a mixture of both. The primary discipline or interest of those who teach in the area is similarly varied, including environmental, social, health and urban and regional planning. These findings are in keeping with the international and regional studies noted above. Finally, whilst some participants had actively sought to teach IA, some had only a loose interest in the field and had inherited an IA unit on taking up an academic post. This Australian study differs slightly to the initiatives conducted in other countries in that survey participants have reflected upon how they came to teach IA. As such, this paper explores the question “Does where we teach IA, who we are and our background, impact on how we teach IA?” Several of the IA units from different Australian Universities will be examined and compared to test this question. The methodology used is both quantitative and qualitative, with academic’s who participated in the special symposium reflecting on the IA units they teach examining how the structure of the unit and the way it is delivered is influenced by the school within which the unit is held, professional background and personal academic interest, and principle areas of research and work interest. Such work has the potential to enhance the teaching practice of IA in Australia.

### **Methods**

Given there has been little analysis of where and how EIA is taught in Australia, this paper set out to explore the question ‘Does where we teach IA, who we are and our background, influence on how we teach IA?’ The quantitative methodology for this analysis comprised a desk-top study to give an overview and summary of the variety of disciplines in which IA is being taught and the levels and various programs of study within which IA topics are situated across Australia. A listing of Australia’s 39 Universities was attained and the web site for each was interrogated for topics or units of study with impact assessment in the title (or its equivalent e.g. environmental assessment, environmental impact assessment). Social Impact Assessment and Health Impact Assessment were not sought during this desk top component and deserve a second pass through University web sites. It may also be that components of IA are embedded within topics that have a broader scope and were not identified in this first pass. The desk top study canvassed some basic background information such as where and in

which discipline IA is taught, several of the IA units (topics or courses) from different Australian Universities are examined and compared to test this question.

During the special symposium participants in academic posts agreed to reflect upon their own personal approach to teaching the IA units for which they were responsible. Participants were asked to describe the structure of the unit they taught, and to consider whether the way subject is delivered is influenced by: the school or discipline within which the subject is held, or the professional background and/or personal academic interests. The findings from this brief survey of seven personal reflections are largely qualitative and is presented in the second part of the paper.

## Results

### *IA in Australian Universities*

Topics (subjects or units of study) with ‘Impact assessment’ in the title (or its equivalent) were found in 25 of Australia’s 39 Universities. The list of Universities teaching IA is provided in Table 1. All but one of Australia’s ‘leading’ universities teach IA (otherwise labelled the Group of Eight (Go8), or research intensive universities that also provide comprehensive general and professional education. The Go8 was established informally as a network of vice-chancellors in 1994 and formally incorporated in 1999). Technologically focussed and smaller regional, academies are represented more frequently among those not teaching IA.

**Table 1: Australian Universities teaching IA as stand-alone topics**

Australian National University*	RMIT University
Bond University	University of Adelaide*
Charles Sturt University	University of Canberra
Curtin University of Technology	University of Melbourne*
Deakin University	University of New England
Edith Cowan University	University of New South Wales*
Flinders University	University of Newcastle
Griffith University	University of Notre Dame
James Cook University	University of Queensland*
La Trobe University	University of South Australia
Macquarie University	University of Sydney*
Monash University*	University of Tasmania
Murdoch University	

**Table 2: Australian Universities not teaching IA as stand-alone topics**

Australian Catholic University	University of Southern Queensland
Central Queensland University	University of Technology Sydney
Charles Darwin University	University of the Sunshine Coast
Queensland University of Technology	University of Western Australia*
Southern Cross University	University of Western Sydney
Swinburne University of Technology	University of Wollongong
University of Ballarat	Victoria University

*\*Leading Go8 Australian Universities*

Courses or programs of study ‘owning’ IA topics belong to a wide range of Faculties and even more Disciplines of study. At the highest administrative level, the Faculty level, Science and Engineering faculties are those most commonly supporting the disciplines that ‘own’ the IA topics, as illustrated in Table 3.

Below the level of Faculty, 25 different disciplines were identified as responsible for courses within which IA topics are embedded. At the Discipline or School level Schools or

Departments with an Environmental focus are the most prevalent ‘type’ hosting degree programs with IA as a unit of study (Table 4).

**Table 3: Faculties supporting disciplines that ‘own’ IA topics**

Division of IT, Engineering and the Environment	Faculty of Science
Faculty of Arts and Sciences	Faculty of Science
Faculty of Computing, Health and Science	Faculty of Science
Faculty of Education, Science, Technology & Maths	Faculty of Science and Engineering
Faculty of Engineering	Faculty of Science, Engineering and Built Environment
Faculty of Humanities and Social Sciences	Faculty of Science Engineering and Technology
Faculty of Humanities and Social Sciences	Faculty of Science and Information Technology
Faculty of Science	

**Table 4 Disciplines or Schools ‘owning’ IA topics**

Department of Civil Engineering	School of Geography and Environmental Studies
Department of Environment and Agriculture	School of Geography, Planning and Environmental Management
Department of Environment and Geography	School of Geosciences
Environment and Planning	School of Land & Environment
School of Arts and Sciences	School of Life and Environmental Sciences
School of Biological Sciences	School of Natural and Built Environments
School of Biological, Earth and Environmental Sciences (BEES)	School Of Natural Sciences
School of Earth & Environmental Sciences	School of Science and Health
School of Economics and Government, Environmental Management & Development (EMD)	School of Social Sciences
School of Environment	School of Social Sciences and Communications
School of Environmental and Life Sciences	School of Sustainable Development
School of Environmental and Rural Science	School of the Environment
	School of Veterinary and Life Sciences

It should be noted that whilst particular disciplines, most notably environmental disciplines, host specific IA topics, the topics are typically available as elective or optional offerings to an impressive array of additional degree programs including students are from ‘Environment’, ‘Planning’, ‘Engineering’, ‘Business’, ‘Science’ and other fields.

In Australian Universities there is some diversity as to when students may take IA in their academic career. In seven universities IA is available only as a postgraduate offering. At a further eight universities it is only available to undergraduate students, typically in the third or fourth year of study. In the remaining 10 universities IA is taught to both postgraduate and undergraduate students. In several instances the IA subject content is the same for both under and postgraduate offerings.

There is considerable differentiation in nomenclature of IA subjects between Australian universities. In many instances ‘Environmental Impact Assessment’ is clearly the sole focus of a subject (12 Universities). In others it is more ambiguous, for example, ‘Environmental Assessment’ (4 universities), where two of the four ‘Environmental Assessment’ subjects focus entirely on IA while the other two use the term more broadly and where IA is but one tool covered in the curriculum. Some subject titles explicitly blend EIA within broader frameworks such as such as ‘Environmental Impact Assessment and Planning’. In other cases IA is overtly included in the title but shares content with other management tools: ‘Environmental Impact Assessment and Auditing’ and ‘Environmental Management - EIA and EMS’.

The mode of delivery of IA subjects was most commonly regular face-to-face lectures and tutorials or practical sessions spread over a whole semester. Few universities run intensive or

concentrated programs over days or weeks. In several universities subjects are taught online as well as face-to-face. On inspection it was not the norm for students to be taken into the field for IA subjects (only five universities indicated field trips as being part of subject activities).

Despite the variation in disciplinary settings, level of study, subject nomenclature and so on, a reading of the subject/unit/topic descriptions reveals a striking similarity in approach to teaching IA. Many IA subjects describe their content as covering: theory of EIA, history of EIA and its evolution, how EIA is practiced in Australia and locally (the legislative context and the administrative and procedural steps involved in conducting an EIA). Many subject descriptions place an emphasis on the political nature of EIA and offer students a critique of the process. The other most commonly described feature of curriculum was the intention for students to be able to apply the concepts learned during the course of study. The use of illustrative case studies is also common. In several instances practitioners engaged in IA are brought in to teach some components.

***Personal reflections of teaching practice***

During the two day symposium held in Canberra in November 2012 a number of academic staff came together to share their experiences and approaches to teaching IA. On the basis of the event it was decided to undertake a study with the participants to explore the factors that shape the way IA is taught. Seven academic staff responded from four different states (New South Wales, Queensland, South Australia and Western Australia), each person was teaching at a different Australian academic institution. Two participants taught Social Impact Assessment rather than IA per se. Apart from the participants specialising in SIA, participants were mainly situated in Science Faculties and /or within environmentally centred disciplines:

Centre for Social Responsibility in Mining [Faculty of Social and Behavioural Sciences]	School of Natural & Built Environments
Department of Environment & Agriculture [within the Faculty of Science and Engineering]	School of Public Health and Community Medicine
Department of Environmental Science [located in greater School of Veterinary and Life Sciences]	School of the Environment
	School of the Environment, [within the Faculty of Science and Engineering]

In keeping with the desk top overview of how EIA is taught Australia-wide the subject headings that participants taught included ‘EIA’, ‘EA’ and variations of these.

Environmental Assessment	Principles of Environmental Impact Assessment
Environmental Impact Assessment	Health Impact Assessment
Environmental Assessment and Management	Community Research Methods

Participants in the qualitative survey reported average class sizes ranging from smaller postgraduate short courses and summer schools of 8-20 students to larger undergraduate classes of up to 130 students. Postgraduate classes were most likely to include international students and undergraduate classes mainly captured local student enrolments.

Participants were asked about their experience of teaching and as to whether or not they had expertise with the subject matter of IA when they commenced teaching. The number of years teaching an IA class varied between symposium participants from 5 to 27 years as did the degree of practitioner experience (conducting or being engaged in some practical aspect of IA) which ranged from no practical experience to 25 years of practical engagement with an EIA process. Not all of the participants set out to become specialists or teachers of IA; only three of the seven participants intentionally pursued teaching roles that included IA. For the others IA was a topic they were asked to teach or acquired. It is interesting to note however, that research interest in IA emerged for some of the participants once their teaching role in IA

became established and now these participants are researching and publishing about various aspects of IA. In other words, IA has become an area of research interest emerging as a consequence of teaching it.

The most experienced teachers were able to reflect on changes to their teaching practice over time, especially in regard to methods of delivery. For these 'old timers' a rise in student numbers and increasingly heavy administrative loads has resulted in a shift from a skills-or practitioner-based approach to teaching IA to a more knowledge-imparting approach. The majority of symposium participants collectively shared very similar elements within their curriculum design including: placing IA in a context of environmental management practice, the procedural elements of IA and using case studies to illustrate some of the challenges faced in conducting assessments, and challenging students to consider the strengths and weaknesses of IA. In this respect the participants match the summary review across all Australian universities teaching IA. A common thread emerging from comments made by the participants was that although many IA topics are taught within engineering and science disciplines the socio-political aspects interwoven in the IA process means that the tone and coverage of subject matter is removed from a hard science format. One of the most significant yet unsurprising differences identified through the qualitative data is that teachers with practitioner experience have the capability to draw upon rich case study material assisting students to absorb theoretical aspects and to reinforce IA principles. There was also diversity in how participants delivered their IA subjects. Very few participants follow a traditional lecture/tutorial format. Intensives and summers schools were methods used by three participants. Others explain they use student directed approaches such as 'reading courses' whereby students are provided with resources and are expected to conduct their own study focussing on the relevant area for the week and afterwards attending workshops to discuss questions and challenges put to them. Field trips were not mentioned as an aspect of current teaching practice by any of the participants.

This modest qualitative study has revealed that regardless of the experience, background, research motivation, class size or cohort of student being taught that this small group of participants share some remarkable similarities in their approach to teaching. The coverage of content described by participants was fairly consistent in the way IA is introduced to novices in this field of study. Some very clear differences were also evident largely in relation to mode of delivery.

## **Conclusion**

This paper has presented both an overview of IA as taught across Australian universities and a more detailed investigation as to whether the discipline where IA is taught has an influence on the design and teaching philosophy held by academic staff. It is clear that despite IA being largely situated within science and engineering disciplines it is often available to students from a very broad range of courses and programs, reinforcing the notion that IA is highly interdisciplinary field of study. The findings of this study correlate strongly with work of a similar nature conducted with international audiences. It is mainly taught in 'environmental' disciplines; is available at both undergraduate and postgraduate levels; teaching methods are diverse and mix 'theory' with a strong emphasis on practical application. IA is typically offered as a stand-alone topic and not as a program of study.

The quantitative summary of Australian universities only partially captured detail about mode of delivery. This is an aspect worthy of closer inspection suggested by the qualitative study. How topic content is delivered was the most distinguishing feature of teaching practice in the small study.

## References

TB Fischer, P Gazzola, U Jha-Thakur, I Belcakova and R Aschemann (2007) *Environmental Assessment (EA) Lecturers' Handbook and Curriculum for EA related Master Programmes*, ROAD Bratislava , Bratislava.

T Fischer, U Jha-Thakur, I Belcakova, and R Aschemann (2010) *TwoEA-M - Enhancing Attractiveness of Environmental Assessment and Management Higher Education*, Paper presented at 'IAIA10: The Role of Impact Assessment in Transitioning to the Green Economy 30th Annual Meeting of the International Association for Impact Assessment 6-11 April 2010, International Conference Centre Geneva – Switzerland.

L Sánchez and A Morrison-Saunders (2010) Professional practice Teaching impact assessment: results of an international survey. *Impact Assessment and Project Appraisal*, 28(3), September, pages 245–250.