

# Engaging our overseas graduate IT coursework community: Developing communication and critical thinking skills

Lubna S. Alam and Penny Collings  
School of Information Sciences and Engineering  
University of Canberra

## Abstract

*It is evident, both in the literature and our experience in teaching, that many overseas students need assistance and guidance to accommodate cultural and academic expectations of Australian universities in their first year of graduate studies. This paper discusses the design of an entry-level subject, Professional Practice in IT, for our graduate IT coursework students, to meet their needs. The paper extends our previous work to support students in adapting to the Australian teaching and learning environment and minimise plagiarism. The aim of the subject is to institutionalise appropriate support for overseas students (and mature students who return to study after a long break) at the entry point to our graduate coursework to support their learning. The subject incorporates critical thinking, effective group work and communication and time management skills. The skills are reinforced in later subjects as part of our quality assurance approach to ensure that students become more actively engaged in their own learning and that the requirements of potential employers are met.*

## Introduction

Our school has, for many years, been putting in place measures to assist overseas and local students to adapt to the experiential, action learning style of our IT courses. Students need cognitive skills like critical analysis and evaluation. Potential industry employers continue to emphasise the importance of communication, group work and facilitation skills as desirable graduate attributes (Davies, 1995; Nunan, 1999). Many of our commencing graduate students (often without any previous IT background) have completed their undergraduate degree in a different country, and therefore have expectations of what studying at an Australian university involves that are different from local students. They typically lack research and communication skills, and this manifests itself in poor report writing and plagiarism. They have a constant struggle to balance their work, study and social life, indicating poor time management skills and they have problems related to settlement, i.e. accommodation, transportation and weather. These students struggle to settle in and adapt to new ways of learning, in particular in IT courses at the graduate level. This is often manifested through higher failure rates/lower subject pass rates (AUIDF, 2004) and plagiarism (Baskett et al., 2004; Alam, 2004).

In this paper, we briefly discuss our initial work in 1998-2003 and then present a needs analysis/situational analysis leading to the development of a new subject, Professional Practice in IT, its content and resource requirements.

## Previous work and needs analysis

Analysis of our graduate IT subjects over the period 1998–2003 indicated that international students underachieve significantly compared to local students (AUIDF, 2004; Baskett et al., 2004). While this has been attributed to a range of factors, a significant problem appeared to be a lack of research and communication skills evidenced by plagiarism and poor report writing.

In the wider context, in 2003 both qualitative and quantitative data highlighting differences between the learning styles of international and Australian graduates were collected from multiple sources. These included ongoing discussions with a panel of industry partners, potential employers and practitioners in the field of IT, which emphasised the need for improved communication skills in graduates; ‘on campus’ student surveys of students’ perceived needs which indicated that students value support in this area; and interviews with staff at a number of south Asian universities which confirmed a range of contentions concerning the differences in emphasis placed on critical analytical and research skills.

Much of these findings were reported in Baskett et al. (2003) and through a number of seminars to a wider community within the university. The research undertaken was funded by two internal teaching grants. The final reports are yet to be published.

In addressing the issue of plagiarism and report writing, in 2003 a study was undertaken (Baskett et al, 2004) using a combination of report writing workshops and a plagiarism support system, provided by turnitin.com. The study covered 63 students working in groups of 4 or 5 submitting three reports over the course of the semester. On reaching the third submission, problems with matching text were eradicated and reference handling and report structuring had improved. While the results continued to emphasize the differences in learning and writing styles between international and Australian graduates, the study provided strong evidence of the value of the approach.

In 2004, the approach was modified and extended. 248 students undertook 478 individual text-based assignments across 9 subjects. These were assessed for matching text, referencing style and report writing. 216 (87.6%) students were subsequently required to attend at least one workshop. Students were also encouraged to attend a workshop prior to submitting their assignment and some 10% used this opportunity. Of the 106 students who undertook the process at least twice, marked improvement did not occur until at least two workshops had been undertaken. Although problems with matching or un-cited text were quickly eliminated, the need for attention to referencing style and report structuring was less quickly recognised by students. This work led to further modification of the process in 2005. We are focusing on the need for entry level students learning and practising these skills, continuing to use turnitin.com and workshop support, and mainstreaming these skills in the minds of students.

These studies reinforced the previous analysis that a wide range of factors needed to be addressed. Intervention through the use of TurnItIn.com was addressing only part of the problem. Other factors include the need to create a learning environment that facilitates deep learning rather than surface learning (Biggs, 1999), to introduce support for a range of learning skills at an early entry point and to reinforce, with continued support, research, analysis and communication skills, both written and verbal, as a generic part of academic learning across all subjects.

Benchmarking against other Australian universities revealed that some universities implemented a transition program or even a specific subject for overseas students. Some made it mandatory, others optional, mostly free of cost. The subject usually had zero credit points value and was therefore not assessable, leading to some administrative and course progression problems. The experience of other institutions suggests that students discontinue “as soon as they realised the subject was non-compulsory and non-assessable” (Lang, 2002). Discussions with some of these institutions, however, indicated that the concept was yielding considerable success (Lang, 2002) and the restructure of our graduate courses from 4-cp to a 3-cp model in 2005 created an opportunity to accommodate a 3-cp professional communications subject in IT into our current graduate coursework model.

## **Professional practice in IT (PPIT)**

### ***Structure***

The subject was designed by the team of people involved in the earlier work and experts in academic skills and adult learning, following wide-ranging discussions and group reviews. Reference was also made to programs in other universities. While the subject aims to develop solid foundational materials and strategies for the school to ensure longer-term support, particularly for our overseas students, an initial aim is to create for students a learning environment that encourages critical thinking rather than rote learning. The aim is to develop skills for study at the graduate levels in an Australian education context, placing an emphasis on information technology, the development of research analysis and evaluation skills and information literacy skills (Meldrum & Tootell, 2004) and practical study skills and time management. It was noted that many international students on arrival have established peer group networks (Lang, 2002), however, the course is designed to be an important vehicle for creating and extending early networks with staff and other students.

Our subject is compulsory for students identified as likely to benefit and a student who wishes to opt out of the subject has to provide written evidence of prior industry experience and writing skills to the course convener to be exempted (they must then select a replacement subject).

The majority of the students are international students having undergraduate degrees in disciplines other than computing from a non-English speaking background and includes some local students returning to study after a long break. The subject is not designed, however, to be remedial in any way (e.g. improving an IELTS score from 6.0 to 6.5).

The subject involves a weekly lecture and tutorial/laboratory work during the 15-week regular semester and lectures cover topics such as learning styles, learning situations at the university, information literacy, plagiarism, critical inquiry, professional communication (both written and oral), semiotics, group dynamics and time management. The subject is taught by an academic with expertise in communications and adult learning and extends work that international students may be expected to undertake in our international access program.

### **Design rationale**

The conceptual underpinning of the way the unit is conducted is based on adult learning principles, in particular, though, significantly borrowed from Paulo Freire's (1972) challenge to what he called the 'banking' system of education. The rationale being rather than viewing the students as some type of 'vessel' into which the teacher 'pours' the 'knowledge', the student is viewed as arbiter of meaning where learning becomes a process of negotiating meaning. The students, through the activities they participate in, are encouraged to negotiate meanings (of the 'knowledge' presented in class) for themselves. In this regard the 'teacher' becomes 'facilitator'.

For example, tackling the issue of building particular research and communication skills as required by students at an Australian university involves an understanding, first of all and from the student's point of view, of the philosophical underpinnings of learning theory or 'what is knowledge and how do we acquire it'. The student, though, is positioned between personal past experiences of learning, which are also culturally constructed, and the equally culturally constructed expectations of an Australian university (Das, 2005).

The activities, based on reflection and small group discussion, are constructed so that the student is able to relate to the concept of learning as experienced *previously* by them, to the concept of learning as is required by them *currently*, and *will be* required as continuing students (Prosser & Trigwell, 1999). Put concretely, the students interview one another about their past experiences of learning and their current concept of knowledge and learning. They also explore their expectations of not only *what* is required of them in an Australian university setting, but what this *means* to them (Wenger, 1998). Because it is their *perceived meanings*, which may result in a lack of understanding, of what is required of them, for example, in referencing an essay correctly. Discussion is initially small group discussion, followed by facilitated discussion between the groups as a whole. This exploration allows any 'gaps' or 'contradictions', similarities and differences to be exposed by the students themselves. The rationale is, in finding similarities or difference, gaps or contradictions, the students conceptualise for themselves what is required of them. This, in turn, develops a deeper understanding of learning requirements, and the student's confidence to take control of the learning process rather than relying heavily on a teacher, as such, to 'instil' the knowledge 'in' them. In turn, taking control, showing initiative and responsibility for ones decisions are qualities heavily relied on in the modern IT workforce.

### **The assessment structure**

An assessment structure needs to be aligned with the learning outcomes and teaching/learning activities for effective assessment (Brown, 2001) and influences student learning more than any other factor in the curriculum (Cannon, 2000). Hence the assessment structure in PPIT is designed to be clearly relevant to work required in other subjects. The first two assignments are a literature review and an analytical report on critically evaluating a topic in IT (e.g. the information architecture of a web site). Students are expected to use all the available resources (such as the web, libraries and academic databases) efficiently; use analytical and critical thinking skills to synthesise and organise information; and produce academic and technical reports. The assignments are supported by ongoing report-writing workshops and using turnitin.com to reinforce students' understanding of the principles of referencing and associated plagiarism issues. As written communication in the professional sphere is important, the third assessment requires students to write a set of instructions using an appropriate format.

Students also need to develop skills in group work and demonstrate an understanding of the issues in conflict resolution and negotiation. This is achieved through tutorial group activities. As students perceive assignments as important if they are related to their course, are graded and there is a consequence of failing, a tutorial participation mark is included based on the involvement of the student through participation in reflection and feedback activities.

## Evaluation

The subject is still in its infancy, thus we have not articulated a detailed plan of evaluation. The subject will be evaluated as follows and consider such criteria as:

- Students' progressive results in subject assessments and the data from workshop based support structure and TurnItIn.com reports. Progresses in subsequent submissions indicate positive improvement.
- An end of semester student feedback survey conducted by an independent body, the Centre for Enhancement of Learning and Teaching (CELTS).
- A focus group exercise facilitated by an independent body to provide insight into perceived benefits and possible enhancements to the subject structure.
- Student achievement throughout later stages of their course. The idea is to compare against data gathered earlier to see if there is any improvement in failure rates among international students. This is indeed a long-term goal which would require considerable time before it can be realised.

So far PPIT was offered in first semester 2005 and the subject coordinator ran an end of semester CELTS survey as stated above. The questions chosen attempted to ask the students to reflect on whether or not the stated outcomes of the unit were achieved, not just overall satisfaction.

Evaluation plans are currently being developed to allow for student 'reflection' as central (either through interviews or focus group) to the evaluation procedure. Questions will range from if participation in the subject has improved their confidence with their study, helped them develop research and critical thinking skills, enhanced their information literacy skills in ICT, enable adaptation to Australian style of teaching and learning, help them attain better results, has been a valuable experience and how to improve both teaching and content to make meaningful learning.

Other small-scale student feedback is being gathered in individual units on the workshop-based plagiarism support process to improve efficiency and make it a worthwhile experience for students and staff. The means being used at this end is student reflection in assessment tasks, survey and focus group discussion. The current process as it stands is cumbersome, but so far seems to be the best viable option.

## Conclusion

This paper has outlined the development and implementation of an entry-level communication subject for graduate IT students, designed to meet the needs of students facing a new or different educational culture. While many models have been developed to meet this recognised need, this design has been guided by the emerging needs evidenced in a number of smaller models. It is tailored to focus on clearly defined priorities in a cost effective manner. Implicit in the design is the seamless integration of the skills developed in the university preparation programs and the practical skills required in other programs in the school. The course is readily transferable in the future to undergraduate IT courses and, possibly, other areas of the university and some consideration is already being given to development of a greater focus on web-based delivery.

## References

- Alam, L. S. (2004). Is plagiarism more prevalent in some form of assessment than others? In R. Atkinson, C. McBeath, D. Jonas-Dwyer, & R. Phillips (Eds), *Beyond the comfort zone: Proceedings of the 21st ascilite conference* (pp. 48–57). Perth, 5–8 December. Retrieved from <http://www.ascilite.org.au/conferences/perth04/procs/alam.html>
- AUIDF (Australian Universities International Directors' Forum). (2004). *The comparative academic performance of international students (University of Canberra section)*. In Minutes to the University of Canberra Academic Board, 14 March, 2004, Academic Board Meeting.
- Baskett, J., Brooks, M., & Hewett, M. (2003). *Responding to cultural diversity in ISE tutorials*. Canberra: University of Canberra.
- Baskett, J., Collings, P., & Preston, H. (2004). Plagiarism or support? What should be the focus for our changing graduate coursework cohort? *Proceedings of the Australian Universities Quality Forum 2004* (pp. 95–98). Adelaide. Retrieved from [auqa.edu.au/auqf/2004/proceedings/AUQF2004\\_Proceedings.pdf](http://auqa.edu.au/auqf/2004/proceedings/AUQF2004_Proceedings.pdf)
- Biggs, J. B. (1999). What the student does: Teaching for enhanced learning. *Higher Education Research and Development*, 18(1), 57–75.

- Brown, G. (2001) *Assessment: A guide for lectures*. Assessment series No. 3. LTSN Generic Centre. Retrieved from <http://www.swap.ac.uk/docs/ltsn/assess/03Lecturers.pdf>
- Cannon, R. & Newble, D. (2000). *A handbook for teachers in universities and colleges: A guide to improving teaching methods* (4th ed.). London: Kogan Page.
- Das, R. (2005). Internationalisation of the curriculum: Putting theory into practice in a physiotherapy program. *Journal of University Teaching and Learning Practice*, 2(1), pp. 25–35. Retrieved from [http://jutlp.uow.edu.au/2005\\_v02\\_i01/pdf/das\\_003.pdf](http://jutlp.uow.edu.au/2005_v02_i01/pdf/das_003.pdf)
- Davies, P. & Deshpande, Y. (1995). Student projects in information systems: A case study. In *Proceedings of Australasian Conference on Information Systems 95* (pp. 267–275). (n.p.).
- Freire, P. (1972). *Pedagogy of the oppressed* (M. Bergman Ramos, Trans.). London: Penguin Books.
- Lang, C. (2002). Addressing the transition needs of coursework post-graduate students. In D. Nulty (Ed.), *Changing agendas: 6th Pacific Rim, First Year in Higher Education Conference 2002*: Christchurch: New Zealand. Retrieved from <http://www.it.swin.edu.au/personal/clang/>
- Meldrum, A. & Tootell, H. (2004). Internationalisation of the curriculum: Putting theory into practice in a physiotherapy program. *Journal of University Teaching and Learning Practice*, 1(2), pp. 49–58. Retrieved from [http://jutlp.uow.edu.au/2004\\_v01\\_i02/pdf/tootell\\_002.pdf](http://jutlp.uow.edu.au/2004_v01_i02/pdf/tootell_002.pdf)
- Nunan, T. (1999). Graduate qualities, employment and mass higher education. *HERDSA Annual Conference Proceedings*, 22. Retrieved from <http://www.herdsa.org.au/branches/vic/Cornerstones/pdf/Nunan.pdf>
- Prosser, M., & Trigwell, K. (1999). *Understanding learning and teaching: The experience in higher education*. London: Buckingham Society for Research into Higher Education & Open University Press.
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.

## Acknowledgments

Thanks to Jo Baskett, Senior Lecturer, University of Canberra, who designed and managed the UC Teaching Grants through which much of this work was undertaken. Thanks to Helen Preston, the academic moderator, for her contribution in the needs analysis on the TurnItIn.com workshop-based support process and editing the paper. Also, we are grateful to Carol Drew, Lecturer, for her reflections on teaching and learning activities and rationale for PPIT.

## Author contact details

Postal address: School of Information Sciences and Engineering, University of Canberra, ACT 2601, Australia

Email: {Lubna.Sheikh, Penny.Collings}@canberra.edu.au

Copyright © 2005 Lubna S. Alam and Penny Collings

The author(s) assign to ascilite and educational non-profit institutions a non-exclusive licence to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The author(s) also grant a non-exclusive licence to ascilite to publish this document on the ascilite web site (including any mirror or archival sites that may be developed) and in printed form within the ascilite 2005 conference proceedings. Any other usage is prohibited without the express permission of the author(s).