A Web Environment Linking University Teaching Strategies with Graduate Attributes

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Abstract

This article describes the design of a web-based environment that links teaching strategies used in different faculties with graduate attributes. Whilst graduate attributes have existed at the University of Wollongong since the 1990s, this is the first time teaching strategies that enable students to develop these attributes have been articulated and shared electronically. The strategies are the practical or tacit knowledge of university teaching. The paper provides a background for the role of graduate attributes in higher education and explains the reason for focussing on teaching strategies. It describes the website resource with some examples and outlines dissemination and evaluation plans for the initiative. It is hoped that the website will become a "growing" site as a resource for a university community to share teaching strategies across different faculties.

Introduction

There has been an increased emphasis on graduate outcomes in recent times in the UK, US and Australasia (Clanchy & Ballard, 1995; Crebert, 2002; Down, Martin, Hager, & Bricknell, 1999). In the UK, accountability measures through quality assurance processes have seen an enhanced interest in developing generic skills throughout the higher education sector (Higher Education Council: Quality Enhancement Group, 1998; University of Hertfordshire, 2002) with support provided through the Learning and Teaching Support Network. In Australia, *graduate attributes* have been embodied in policy documents and strategic plans for teaching and learning at many universities. A number of universities have identified ways to support the development of graduate attributes such as the University of Sydney, which provides a plan for implementation (Barrie, 2003) and other universities providing web-based support (Murdoch University, 2002; University of Queensland, 2003). Indeed, one group of universities, the Australian Technology Network, has received federal funding to support the development of generic capabilities of graduates through the identification of case studies of best practice (Bowden, Hart, King, Trigwell, & Watts, 2002).

Whilst the embodiment of graduate attributes at the subject or course level is included in such case studies, it is often hard to distinguish the *teaching strategies* used to support their development. In times of increased accountability and quality reviews, there is strong advocacy from employer groups for monitoring graduate outcomes to discern the level of student achievement (Hager, Holland, & Beckett, 2002). Whilst this may provide indicators of what is being achieved in the area, some tertiary educators, particularly those without a background in the field of education, find it difficult to make explicit what they do in the teaching situation to support the development of graduate attributes.

The focus of this paper is on an approach used by a cross-faculty and cross-unit team at the University of Wollongong for identifying and sharing teaching strategies to support the development of graduate attributes. A website was designed to link the teaching strategies used across the faculties with the graduate attributes identified in the University of Wollongong *Strategic Plan 2002 – 2005* as "a key measure of the University's achievement of its core functions." A feature of the site is that it has been designed for academics to contribute on a regular basis so that the site evolves with the ongoing contribution of strategies. This article first describes the role of graduate attributes within the university, and then describes what is meant by a teaching strategy to support students achieving such attributes. The design of the web site that links these two aspects on the University of Wollongong website is then presented.

The role of graduate attributes in a university

The status of graduate attributes is well recognised and has become linked to quality assurance with implications for both pedagogy and institutional funding (Clanchy and Ballard, 1995; Jones, 2002). However, the responses within and amongst universities have varied (Barrie, 2003; Chanock, 2003). For some, the concept of graduate attributes has been taken on reluctantly and suspiciously as the unwanted child of a union across the business, government, and education sectors. Others, as a number of entries in the B-HERT news (2003) seem to indicate, appear to have embraced the implementation of graduate attributes more enthusiastically or, at least, pragmatically. Generally, implementation responses have fallen into the following areas or combination of areas (Chanock, 2003):

• Mapping and developing where the graduate attributes occur in the curriculum, identifying gaps and developing curricula to fill these gaps;

• Testing students' entry and exit scores on psychometric tests;

- Developing special subjects to teach graduate attributes; and

- Integrating the fostering of the attributes within existing curricula.

In the Australian university context, descriptions of graduate attributes are detailed in individual university policy documents. Specifically, we refer readers to the list of nine graduate attributes and their related tertiary literacies currently identified by the University of Wollongong (2001). And, while each university's specific attributes are meant to distinguish graduates of a particular university or a particular course from graduates from other universities and/ or courses (Nunan, 1999), generally, they encompass such things as:

> (1) the acquisition of a body of disciplinary knowledge, (2) the critical understanding which comes from the communication, application and evaluation of a body of knowledge, (3) the commitment to ethical action and social responsibility, and (4) a capacity for employment and lifelong learning (Jones, 2002, p. 3).

The attributes, therefore, address disciplinary knowledge, values and attitudes as well as skills for lifelong learning and are introduced by terms such as "commitment to…", "capacity for…", ability to…", "an appreciation of…," and "a desire to...".

The University of Wollongong has established a number of structures to support the acquisition of graduate attributes through curriculum integration (Curtis, Lefoe, Merten, Milne, & Albury, 1999; Skillen, Trivett, Merten, & Percy, 1999) and generic graduate attribute programs, such as the compulsory zero-credit point information literacy subject for all first year students (Collins & Hill, 2003). The careers service also supports students to develop graduate attributes through workplace learning programs such as the Higher Education Workplace Skills Olympiad, internships and employment experience with local employers (University of Wollongong, 2004b). While some generic programs do exist, the development of graduate attributes, takes place largely within the disciplines of study at the University of Wollongong. Such a response, according to Barrie (2003), demonstrates a particular definition of graduate attributes as being either:

- *Translating attributes* "…which interact with, and shape, discipline knowledge (for instance through the application of abstract or context specific discipline knowledge to the world of work and society) and which are in turn shaped by this disciplinary knowledge" (p.4); or

- *Enabling attributes* which sit "not as parallel learning outcomes to disciplinary knowledge but as abilities that sit at the very heart of discipline knowledge and learning" (p. 4)

If the agenda of universities has now shifted to producing students who can demonstrate disciplinary knowledge as well as an understanding or valuing or commitment to ethical action and social responsibility, what does this mean for a lecturer's role as a teacher? In addition, if students are to become 'lifelong learners', do they develop these skills independently or is there a role for academics to guide students in developing these skills? One implication of these questions is that more emphasis needs to be placed on how graduate attributes are acquired or developed by students and the role of teaching strategies used by academics to foster such attributes.

Articulating teaching strategies - the practical knowledge of university instruction

Teaching is one of the main roles of academics and often takes up to half of the allocated time in their workload. This time includes not only the face-to-face tutorials and lectures, but also time spent in preparing classes, marking and providing student consultations. Importantly, most academics have favourite teaching strategies which they use to promote student learning in many different ways. However, discussions between academics at university mainly focus on sharing ideas for research. Rarely is there dedicated time to sharing ideas about teaching except for the targeted workshops run on campus or in the occasional incidental conversation.

Many of the strategies used by academics to promote student learning in lectures, tutorials or assignments are not found in books. Instead, they have been developed from personal experience in teaching or are a feature of lecturer's intuitive skills and/or personality. A strategy, therefore, might be an idea or technique to present material or interact with students in a lecture or tutorial. For the purposes of developing the proposed web site to display these strategies, a teaching strategy is defined as:

- either a short-term strategy or the activities of a comprehensive learning environment that assist students in developing one or more features of a graduate attribute;

- a strategy that can be used in a lecture, tutorial, assignment or a combination.

A teaching strategy is NOT the description of a whole subject design, a collection of assignments or an overall subject structure.

Theoretically, a teaching strategy is the *practical knowledge* or *tacit knowledge* of university teaching. A strategy is often personally developed and is usually refined over several teaching episodes or even semesters of teaching through experience and reflection upon experience. Sometimes a teaching strategy is not clearly defined, but rather is implicit in the 'art' of teaching. Elbaz (1983, 1991) was one of the first educational researchers to write about the notion of practical knowledge. In teaching, she described this as "first hand experiences of students' learning styles, interests, needs, strengths and difficulties, and a repertoire of instructional techniques and classroom management skills" (Elbaz, 1983, p. 5). This practical knowledge can cover such areas as knowledge about the self, milieu, subject matter, curriculum and instruction. Other researchers, such as Schön (1983, 1987) suggested that practical knowledge is not explicit in teaching, but rather is embedded in 'the epistemology of practice' in terms of what works or does not work in the context of action or the experience of teaching. Later, Shulman (1986) identified different types of knowledge in teaching such as content knowledge, pedagogical knowledge, curriculum knowledge, pedagogical content knowledge, knowledge of learners and their characteristics, knowledge of educational contexts, and knowledge of educational ends. It is this complex yet often tacit knowledge used by academics to develop teaching strategies that we wanted to make explicit in the proposed project to produce a web site that demonstrated different teaching strategies to address graduate attributes in different faculties.

Design of the website - linking teaching and learning

In 2003, a collaborative ESDF (Educational Strategic Development Fund) grant called *Illuminating Graduate Attributes with Face to Face and Online Teaching Strategies* was funded by the University of Wollongong. It was intended that the project design allow for a sharing of teaching strategies that focused on the holistic—the affective and skills areas of learning, as well as the cognitive areas that collectively make up the graduate attributes.

In addition, it was hoped that the design of the project also encourages the university teaching community to address its responsibility to develop teaching and learning environments which encourage students to develop the attributes rather than leaving this development to the sole responsibility of the students. In particular, it is hoped that the website is an institutionally sanctioned promotion of good teaching practice and promotes the development of 'a community of practice' (Wenger, 1998) for university teaching.

The intention that the graduate attributes act as a focus for the development of a community of practice and for making explicit the tacit knowledge of university teaching influenced the ways in which the project team collected strategies for the website. For example, it was decided that team members would seek academics who promoted their teaching within each faculty and invite them to contribute a strategy. Furthermore, a decision was made to use minimal evaluation procedures to ascertain effectiveness of the strategy before it was placed on the site. The reason for this is that the team wanted to encourage the sharing of strategies using different perspectives on teaching rather than just focus on one view of what could be "best practice". Also, using rigorous evaluation procedures would not encourage the contribution of strategies by a range of academics. So rather than team members taking a role of censuring teaching practice, we wanted to encourage dissemination of practice but with some level of scrutiny. Evaluation of a particular strategy, however, and its transferability across contexts and teaching styles is a matter for individual teaching staff. By providing contact details of the academic who uses a strategy in a particular context, we are encouraging dialogue between that academic and other staff who might be interested in adapting and/or using the strategy. It is through this dialogue and any adaptations and /or modifications arising from the dialogue that we hope best practice is achieved and shared. The conditions for acceptance of a strategy for the site is that it does promote an attribute and that it is a strategy as outlined on the website.

Interestingly, in the collection of teaching strategies for the website, some academics were able to articulate their practical knowledge about teaching more easily than others. Whilst some academics only had to view a sample strategy and were able to present their own, others had to be interviewed by team members to make their strategy more explicit. This is evidence that many teaching strategies used by academics are implicit or tacit in their practice. The procedure of interviewing future contributors to enable them to articulate their strategy will be an ongoing part of the project across different faculties. Once the strategies were gathered, the web site was designed to best display those strategies.

The project website design provides an environment that offers academics a rich set of resources to assist them to foster the development of graduate attributes (University of Wollongong, 2004a). The conceptual framework of the site links teaching strategies from various faculties with the nine existing attributes of a Wollongong Graduate. Importantly, icons have been developed on the home page of the Teaching Strategies for Graduate Attributes website as a visual representation of each attribute together with a project icon that portrays teaching and learning as a dynamic relationship (Hoban, 2000). This project icon incorporates an infinity sign as demonstrated in Figure 1.
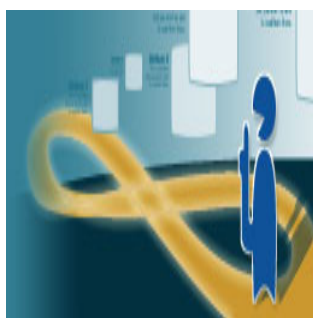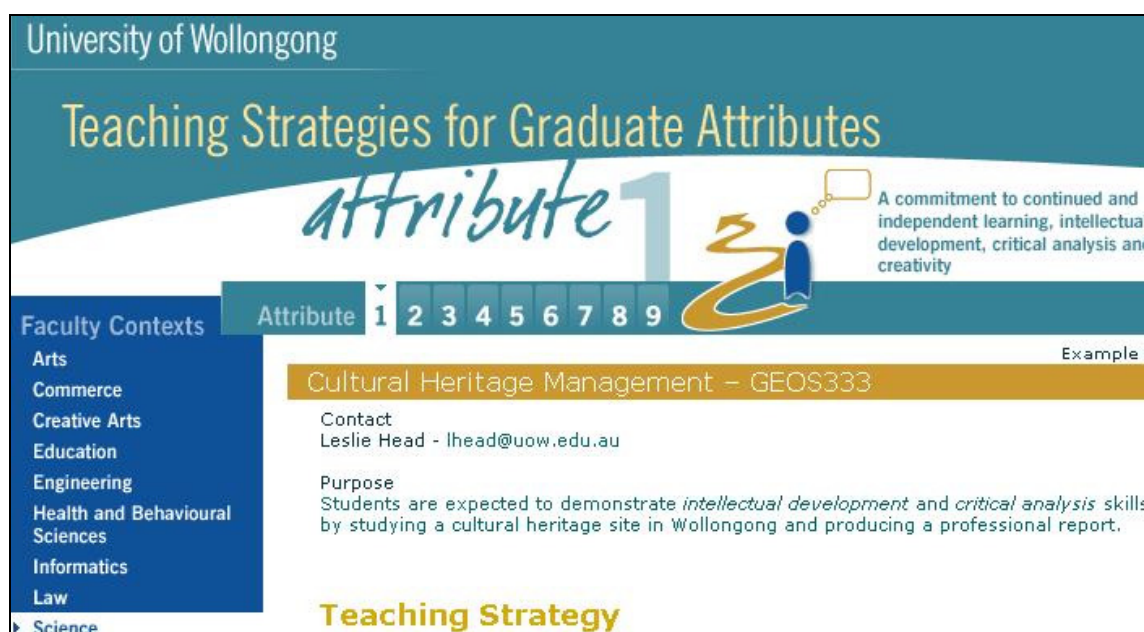

Figure 1: Infinity sign representing the dynamic relationship between teaching and learning
Below the infinity sign on the homepage there are icons for the attributes as shown in Figure 2.

Figure 2: Iconic representations for four of the attributes

Each icon represented in Figure 2 is then hyperlinked to related teaching strategies as shown in Figure 3. The website has been designed to demonstrate the interrelationship between explicit teaching strategies and the fostering of attribute development by encouraging teachers to explore how they are implemented in other discipline areas. This sharing of strategies across and within faculties is supported through a navigation structure that allows teachers to either view examples for a particular attribute or for a particular faculty s, as demonstrated in Figure 3.

Figure 3: Heading of a teaching strategy from the Faculty of Science

Each teaching strategy focuses on the role of the lecturer, identifying the steps the lecturer takes to implement the strategy as shown in a different strategy in Figure 4. Through

exploring strategies used by others, teachers are able to reflect on their own strategies and adapt or adopt those relevant to their own teaching.
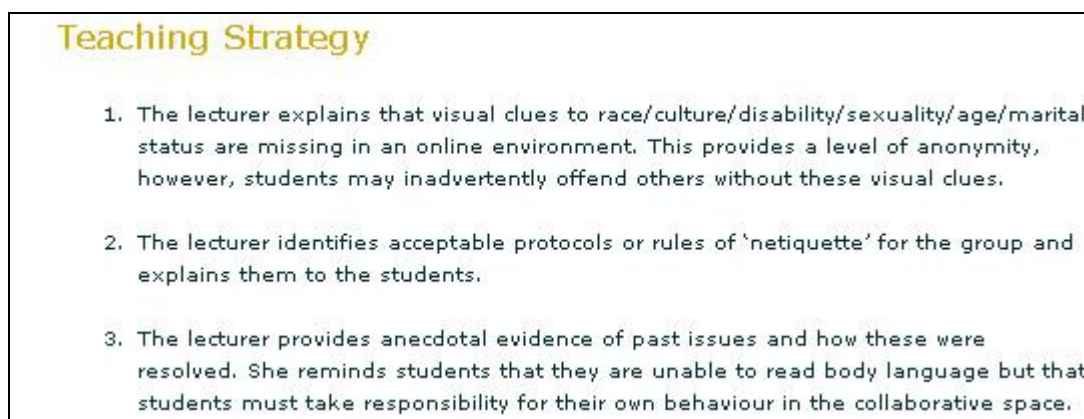
Teaching Strategy

1. The lecturer explains that visual clues to race/culture/disability/sexuality/age/marital status are missing in an online environment. This provides a level of anonymity, however, students may inadvertently offend others without these visual clues.

2. The lecturer identifies acceptable protocols or rules of 'netiquette' for the group and explains them to the students.

3. The lecturer provides anecdotal evidence of past issues and how these were resolved. She reminds students that they are unable to read body language but that students must take responsibility for their own behaviour in the collaborative space.

Figure 4: Example of teaching strategy for Attribute 6

Implementation

The success of this website depends on three main factors: (i) how well academics understand and value the website; (ii) whether academics decide to reflect on their teaching and contribute further strategies; and (iii) how the site is used as a resource for the professional development of academics in regard to teaching in higher education. In order to promote use of the site by academics, a number of initiatives have been carried out to support the implementation process:

- The names and contact details are provided to encourage discussion with those who have proposed a strategy.

- There is a "How to Contribute" page that is linked to the home page and each strategy. On this page there are three simple steps to follow as well as an example to be downloaded.

- A university launch occurred in February 2004 by academic leaders in the university to give the site status.

- The site was demonstrated at faculty meetings to promote its use.

- Bookmarks promoting the website were distributed across the university.

- Cross faculty workshops were implemented to encourage exploration of the site and discussion of adapting the strategies to meet the needs of different disciplines. The face-to-face workshops were also used to encourage staff to contribute their own ideas to the site, both during the workshops and afterwards.

- Within faculty support was provided to encourage self-managing teams (Curtis & Ringholt, 2002).

Through the demonstration of teaching strategies, opportunity to discuss the implementation of strategies during the workshop program and encouragement for staff to make contributions to the site, the authors anticipate the site will grow to include a much wider range of strategies beyond the 30 already contributed. It is envisaged that the site will be used at introductory teaching courses for beginning academics and as a way to disseminate exemplary teaching strategies in applications for awards and promotion. There are also possibilities to add resources to the site to extend university conversation about the relationship between teaching and learning.

Evaluation and future directions

The test for any innovation is the effectiveness of its implementation and sustained use. In this case the challenge is to both encourage academics to make use of the site and to contribute new strategies so the site evolves. Evaluation of the website will occur during the second half of 2004 and will include a review of website usage statistics, a survey of all academic staff and focus groups with self-nominated staff. It will focus on the following questions:

- How frequently has the site been accessed since the launch?
- How is the site being used by academics?
- What changes have been made to any subjects as a result of the innovation?
- How has it assisted academics to introduce new strategies for the development of graduate attributes?
- Is it being used in CEDIR workshops for professional development of academics?

Following the evaluation of the use of the site in 2004, the University anticipates developing a further site to support the development of postgraduate research attributes.

Conclusion

The web site is an attempt at a creative and collaborative response to promote the notion of graduate attributes. The development of the site has deliberatively involved a 'bottom-up' and contextualised approach involving staff from all faculties and university units in generating and sharing strategies. This is in contrast to a 'top-down' approach in which academics are nominated to contribute their teaching strategies. By creating a site which encourages the articulation, sharing and discussion of teaching, it is hoped that strategies will be both refined and adapted to suit particular contexts. While the site is explicitly about graduate attributes, it is more importantly about promoting a conversation across the university about the relationship between teaching and learning. Generating a university culture that includes ongoing discussions about teaching as well as research is a long-term goal. In particular, the cross fertilization produced from sharing teaching strategies across different faculties is a worthwhile endeavour.

Acknowledgements

References

Barrie, S. (2003). Using conceptions of graduate attributes for research-led systematic curriculum reform. Paper presented at the *11th Improving Student Learning,* Hinckley, Leicestershire, September 1-3, 2003.

Bowden, J., Hart, G., King, B., Trigwell, K., & Watts, O. (2002). *Generic Capabilities of ATN University Graduates.* Teaching and Learning Committee, Australian Technology Network. Retrieved April 20, 2003, from http://www.clt.uts.edu.au/ATN.grad.cap.project.index.html

Business/Higher Education Round Table. (2003, April). *B-HERT News: Developing Generic Skills: Examples of Best Practice.* Retrieved November 11, 2003, from http://www.bhert.com/documents/B-HERTNEWSNo.16_001.pdf

Chanock, K. (2003). Graduate Attributes: The challenges for curricula in Arts degrees. Paper presented at the *7th Pacific Rim, First Year in Higher Education Conference,* QUT 9-11July.

Clanchy, J., & Ballard, B. (1995). Generic skills in the context of higher education. *Higher Education Research and Development*, 14(2), 155-166.

Collins, R., & Hill, A. (2003). Online introduction to Information Literacy: Ticking that box or embedding that attribute? In G. Crisp, D. Thiele, I. Scholten, S. Barker & J. Baron (Eds.), *Interact, Integrate, Impact: Proceedings of the 20th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education* (Vol. 1, pp. 126-133). Adelaide.

Crebert, G. (2002). *Institutional research into generic skills and graduate attributes: constraints and dilemmas.* Paper presented at the Building Learning Communities through Education: Lifelong Learning Conference, Yeppoon, Queensland. Retrieved March 15, 2004 from http://www.library.cqu.edu.au/conference/papers/crebert.pdf

Curtis, S., & Ringholt, L. (2002). Learning measurement: The payoff from leadership development programs in real and measureable. *HR Monthly*, February, 32-33.

Curtis, S., Lefoe, G., Merten, M., Milne, C., & Albury, R. (1999). Passing Through The Pain Barrier: Making a Flexibly Delivered Degree. Paper presented at the *Cornerstones of Higher Education: HERDSA Annual International Conference,* Melbourne 2001. Retrieved September 28, 2002, from http://www.herdsa.org.au/branches/vic/cornerstones/pdf/curtis3.pdf

Down, C., Martin, E., Hager, P., & Bricknell, L. (1999). Graduate attributes, key competence and judgments: exploring the links. Paper presented at the *Cornerstones of Higher Education: HERDSA Annual International Conference,* Melbourne. Retrieved September 28, 2002, from http://www.herdsa.org.au/branches/vic/cornerstones/pdf/down1.pdf

Elbaz, F. L. (1983). *Teacher thinking: A study of practical knowledge.* London: Croom Helm.

Elbaz, F. L. (1991). Research on teacher's knowledge: The evolution of a discourse. *Journal of Curriculum Studies,* 23, 1-19.

Hager, P., Holland, S., & Beckett, D. (2002). *Enhancing the learning and employability of graduates: The role of generic skills.* (Position Paper No. 9). Melbourne: B-HERT. Retrieved November 28, 2003, from http://www.bhert.com/Position Paper No 9.pdf

Higher Education Council (HEQC): Quality Enhancement Group. (1998). *What are Graduates? Clarifying the attributes of 'Graduateness'.* Retrieved August 21, 1998, from http://www.lgu.ac.uk/deliberations/gradutes/starter.html

Hoban, G. F. (2000). Using a reflective framework to study teaching-learning relationships. *Reflective Practice,* 1(2), 165-183.

Jones, J. (2002). Generic attributes an agenda for reform or control? Selected proceedings of the *Language and Academic Skills Conference*, University of Wollongong. Retrieved February 12, 2004 from http://www.uow.edu.au/LAS2001/selected/jones_2.pdf

Learning and Teaching Support Network. (nd) *LTSN Generic Centre.* Retrieved November 30, 2003 from http://www.ltsn.ac.uk/

Murdoch University. (2002). *Graduate attributes at Murdoch University*. Retrieved September 15, 2003 from http://www.tlc.murdoch.edu.au/gradatt/

Nunan, T. (1999). Graduate qualities, employment, and mass higher education. Paper presented at the *Cornerstones of Higher Education: HERDSA Annual International Conference*, Melbourne 2001. Retrieved September 28, 2002, from http://www.herdsa.org.au/branches/vic/cornerstones/pdf/nunan.pdf

Schön, D. (1983). *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.

Schön, D. (1987). *Educating the Reflective Practitioner*. San Francisco: Jossey-Bass.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. Harvard Educational Review, 57(1), 1-22.

Skillen, J., Trivett, N., Merten, M., & Percy, A. (1999). Integrating the instruction of generic and discipline specific skills into the curriculum: a case study. Paper presented at the *Cornerstones of Higher Education: HERDSA Annual International Conference,* Melbourne 12-15 July. Retrieved September 15, 2001 from http://herdsa.org.au/vic/cornerstones

University of Hertfordshire. (2002). *Hertfordshire Integrated Learning Project.* Retrieved September 15, 2003 from http://www.herts.ac.uk/envstrat/HILP/

University of Queensland. (2003). *Developing course learning goals and graduate attributes*. Retrieved September 15, 2003 from http://www.tedi.uq.edu.au/teaching/assessment/learningGoals.html

University of Wollongong. (2002). Strategic Plan: 2002-2005 (Report). Wollongong: University of Wollongong.

University of Wollongong. (2001). *Graduate attributes: Tertiary literacies.* Retrieved February 13, 2004 from http://www.uow.edu.au/LOL/GATL/GATL.html

University of Wollongong. (2004a). *Teaching strategies for graduate attributes.* Retrieved February 14, 2004 from http://www.uow.edu.au/about/teaching/attributes

University of Wollongong. (2004b). *Discover Your Employability*. Retrieved March 24, 2004 from http://www.uow.edu.au/careers/discover/index.html

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.