

Improving Statistical Education: Developing a CDROM orientation and training program for casual tutors.

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Tutoring is not a profession in most Australian Universities. Tutors are not required to have formal training in Education. Typically they are graduate students or senior undergraduate students. This paper discusses the development of a CDROM aimed at providing an orientation and training program for casual mathematics and statistics tutors. The CDROM includes video clips demonstrating effective teaching strategies modeled by a variety of exemplary tutors in mathematics and statistics as they teach in different types of classrooms (demonstrations, blackboard tutorials, traditional tutorials and laboratories). Clips illustrate methods used to cope with different teaching issues for example establishing rapport, generating interaction and teamwork, getting students to respond, asking questions, reviewing material, clarifying student thinking, and demonstrating solutions. It also canvasses issues such as the need for reliable and consistent marking. It also covers a range of legal obligations, of university, faculty and school policies and practices that tutors may encounter. These include amongst others dispute resolution procedures, health and safety obligations, quality assurance and the administrative requirements of the school in relation to pay, hours of employment, contacts and associated processes.

Delivering a high-quality teaching program for large classes in many universities throughout the world is dependent upon casual/sessional teaching staff. Typically a permanent academic staff member is responsible for the lecturing to the large class and casual tutors responsible for delivering the associated small group teaching. The identification and training of tutors and the co-ordination of work and ensuring consistency and high quality for multiple small group-tutorials is often problematic. Tutoring is often undertaken by graduate students with no teaching qualifications and possibly limited teaching experience. The niche that this project filled was the provision of an orientation to a particular university context, *The University of Wollongong* and to teaching the small group in the discipline of Mathematics and Statistics.

The development of the *Tutor Training and Orientation* CDROM was inspired by two projects. The first project drew together talented lecturers of large classes across disciplines from universities, Australia wide. One outcome was the development by University of Queensland of website of resources for *Teaching Large Classes* (2002, <http://www.tedi.uq.edu.au/largeclasses>). The second University of Queensland project involved the provision of resources for Sessional Teaching (2003, <http://www.tedi.uq.edu.au/SessionalTeaching/>). The CDROM developed links to both of these sites.

University lecturers are typically educated in their discipline not in Education. In recent years, to improve the quality of lecturing at *The University of Wollongong* new permanent or contract academic staff members have been required to undertake a course *Introduction to Tertiary Teaching*. While the Centre for Educational Development and Interactive Resources (CEDIR) at the University organizes and run training programs for casual staff, small student intakes into in Mathematics and Statistics Departments often means that the numbers of new tutors is small and classes are not cost effective. Because of the technical nature of the discipline combining tutors with those teaching other disciplines has not always been considered an appropriate solution. Until 2003 casual staff members were under no such obligation. With subject co-ordinators and lecturers under increasing pressure to increase productivity they have little time to invest in tutor training and orientation. This creates a potential risk associated with a heavy reliance on a small pool of experienced and gifted tutors. To address this issue and to prepare for the time when the

existing pool of tutors is not available a CD Rom has been developed to provide a rudimentary orientation to teaching and learning of Mathematics and Statistics.

Tutors at the University of Wollongong are restricted in the number of hours they are permitted to teach, with approximately 8 hours of teaching contact being the upper limit in Mathematics and Statistics. Tutoring is not considered a permanent form of employment. If a tutor is to teach between say one and eight hours per week over two thirteen week sessions, then the non-paid training they are to undertake is also likely to be limited. The *Tutor Training and Orientation* CD Rom is a resource for tutors that they may consult as an initial form of familiarization and as a reference as required.

The limited time and funding to train casual tutors is in stark contrast to what a tutor needs to know in order to teach effectively. As universities are increasingly recognized as businesses and employers in an increasingly litigious society and as student numbers continue to grow improving teaching extends well beyond classroom practices. The training and orientation CD Rom developed includes materials on legal obligations and rights, University *Codes of Practice* in addition to Faculty and Departmental policy and procedures and specific information pertaining to the different subjects and courses taught. The CD Rom also identifies the services that they may use themselves and that they may refer student to in order to facilitate student learning. Also included are video clips in a variety of classroom settings (demonstrations, blackboard tutorials, traditional tutorials and laboratories).

Legal Obligations. While all staff and students are subject to all Australian laws, there are three sets of legislation which are of particular concern to the University as an employer. In broad terms this legislation covers the rights and responsibilities of staff and students in relation to occupational health and safety, equal opportunity and privacy.

1. Under the Occupational Health and Safety Act (1983) the University of Wollongong has an obligation to provide a safe working environment for staff and students (1994, <http://www.uow.edu.au/admin/personnel/ohs/aboutohs.htm>). Tutors need to know how to instruct students as to safe and effective methods of work, how to report any incidents and in other matters such as how and when to evacuate buildings.

2. Equal Opportunity Policy which incorporates a number of Commonwealth laws including the Racial Discrimination Act (1975), the Sex Discrimination Act (1984), the Affirmative Action (Equal Opportunity for Women) Act (1986), the Disability Discrimination Act (1992) and state laws including the Antidiscrimination Act (1977), the Racial Vilification Act (1989), Age Discrimination Act (1994), Homosexual Vilification Act (1994), Transgender Discrimination and Vilification Act (1994) and Equal Opportunity Act (1980). Once again these acts address both rights as employees and obligations. (University of Wollongong, 2003, <http://staff.uow.edu.au/eo/eeopolicy.html#legislation>).

3. The Privacy Act (1988), Privacy and Personal Information Act 1998 (NSW) as amended by the Privacy Amendment (Private Sector) Act 2000 (NSW) (University of Wollongong, 2003, <http://www.uow.edu.au/about/privacy/>) addresses issues regarding the collection and use of personal information. This has implications for all staff and necessitates appropriate practices for example when returning students work and even acknowledging to others whether or not students are members of a class.

Codes of practice. These are University level policies, developed for a variety of reasons, to ensure that students achieve their maximum potential and as a means of pre-empting problems. There are several codes of practice which must be adhered to including, the *Code of Practice Students* and *Code of Practice Staff* (University of Wollongong, 2003, http://www.uow.edu.au/about/teaching/cop_students.html#2) detailing the responsibilities of staff and students. Specific concerns include the need to assess students' work "fairly, objectively and

consistently”, how to deal with plagiarism and grievance mechanisms. The University also specifies graduate attributes that must be obtained by students before they graduate. Teaching is not simply about teaching the discipline it is also about developing qualities in graduate students. These qualities include for example, a student’s “a commitment to continued and independent learning, intellectual development, critical analysis and creativity.” (University of Wollongong, 2003, <http://www.uow.edu.au/about/teaching/attributes.html>). Tutors need to be aware of these broader aspects of education, so that students do indeed gain for example, independence in their learning.

University support structures. Tutors need also to be aware of the structures within the University that exist to support them as employees and that offer support to the students. These structures include counseling services, learning development services, disability services, international student support and self access learning support. Knowledge of the range of services within each of these units and the referral processes will assist the tutor who identifies students or they themselves need support. Staff and students also have access to equipment for use in their teaching and learning.

At the Faculty and School/Department levels are additional policy and procedures which have an impact on tutors. Tutors need to know how they get paid, what forms to complete, dates for submission. They need accounts to access the computer system, they may need to record marks and there are dates by which these things must be completed. At a subject level, within a school there may specific issues directed by subject co-ordinators as to how to set and mark assignments.

Classroom teaching. Then of course comes teaching. For students high quality teaching is a major factor in enjoyment and learning of subject material. The segments *In the classroom* on the CD Rom include a look inside the classrooms of three tutors. The videos of classroom activity represent different teaching structures: a blackboard tutorial where students complete their work on a blackboard in full sight of tutor and other students; a traditional tutorial where the tutor works through a worksheet with students and an activity based statistics class where student activity is interspersed with the teacher questioning, reviewing, introducing and essentially facilitating the learning process.

References

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