John Currie gets visibly excited when he mentions the influence of Donald Schon's seminal work *The Reflective Practitioner*. Along with the usual student-focus, Schon's notion of "the swampy indeterminate zones of practice" has provided an additional pedagogical resource with which to conceptualise his learning and teaching. In his own units of study, John thinks about how to move his Engineering students to see and embrace shades of grey. He says, "our students are good at looking at things with mathematical certainty but unfortunately, human beings don’t always think that way. My job as a teacher is often about stepping back from being an expert. It’s about developing structured learning situations, encouraging dialogue in class, introducing students to a range of different theoretical perspectives and teaching them how to conduct themselves academically so that they can cope with all kinds of different shades". John wants his students to be “curious about the world and to make a difference”. In a world characterised by constant change, he reflects that “students require skills which help them to transform multitudes of data into knowledge, and to exercise wisdom in their judgments”. This is the new learning context in which Engineering undergraduates are now entering the Faculty, and it is the new educational context in which Engineering academics are now being encouraged to teach.

If in his own classes John’s focus is on opening up the possibilities for uncertainty, there are aspects of certainty that pervade his role as Associate Dean (Teaching and Learning) and Chair of the Faculty’s Teaching and Learning Committee. Since 1992, when he first began lecturing in Industrial Management, he saw the potential for extending his ideas about learning and teaching beyond his immediate classroom context. He started to collaborate with colleagues in units of study focused on developing the professional practice and competencies of engineers. He began sharing his enthusiasm through team-teaching, and noticed the opportunities for professional development and leadership. Soon after, this work extended to departmental and faculty level initiatives. In his tenure as Associate Dean, John has led a number of projects designed to better articulate care for students’ experiences of learning. The first notion which drives this vision is a concern for ‘alignment’. While John is keen for the faculty to improve its SCEQ scores, the work it has since undertaken is focused on developing an alignment between the curriculum goals, structures and activities for achieving learning outcomes, and assessment, across the board. He says, “we have done a lot of work to find ways of systematising practice so that students know what to expect, so this is consistent with what is taught in the classroom, and reinforced through assessment.” In 2003, the faculty began an extensive program in curriculum mapping to support reform and innovation. Concerned that students were making ill-informed decisions about their degree program pathways due to poor quality information, the process provided an evidence basis for cultural change and has been the springboard for a range of improvements ever since. “We now have a common unit of study template that covers all relevant aspects of the teaching and learning process. It outlines things like grade descriptors which are then tied to marking criteria. It shows students how units of study are related. It invites academics to express the graduate attributes that students develop in their units of study. So, it makes the learning process transparent to students but it also encourages academics to make explicit their pedagogical understandings.” John says, that this is simply about normalising good practice. “It sounds pretty simple but for some academics it’s very different from how they’ve done things previously.” He sees his role as developing this work as collaboratively as possible.

The second idea that John employs to support faculty-level teaching and learning development work is a concern for systematising innovation. “Another project that I’ve been involved in has been developing a benchmarking instrument and process that explores the strategic level management of teaching and learning. For instance, some of our learning around the development of a new flexible first year program came from benchmarking relationships with the Engineering Schools at both the universities of Queensland and Melbourne. Our discussions with Queensland helped to crystallise some of the management issues we needed to take into account in our planning (eg, resourcing a Director of First Year) so that we had the right mechanisms to support its success, and our conversations with the University of Melbourne helped us to consolidate our understanding around the need for a sound pedagogical rationale underpinning curriculum reform processes. This is now an annual process”. Laughing, he adds, “we call ourselves the G3”.

One of the concrete outcomes from all of this learning and teaching innovation has been the development of a dynamic faculty online database. While still a work-in-progress, the database is about capturing and systematising elements of good learning and teaching and practice as embodied in an academic’s unit of study outline. Academics use it to revise their unit of study outlines; students use it to make decisions about their learning pathways and to check the scheduling of assessment; the faculty uses it to make planning decisions. John says, “the project we really want to progress this year is about integrating the university’s policy on graduate attributes into all units of study. This is about strengthening alignment, and we have TIF funds for that. My job is to manage the process to help academics think pedagogically about what these attributes might be, and then to support its articulation. The online database helps us to communicate that. For instance, a student can visit information about a particular unit, read about the ways in which the unit develops particular attributes, and the strength of that development is indicated in a colour gradation. If it’s a very dark colour, a student will know that there’s an emphasis on that particular attribute over others. So, the database supports the systematisation of an educational rationale for learning and teaching development, change and enhancement.”

Clearly, all this effort to innovate and systematise represents a cultural shift of sorts around issues of learning and teaching. John doesn’t shy away from the considerable challenges ahead. “This is a heavily research-intensive faculty, but one that is becoming more aware and beginning to understand the importance of learning and teaching for developing capable and critical engineers. My job is to make the challenges we face known, to engage people in discussion about what we might do,”

To explore the online unit of study database, visit: http://intranet.eng.usyd.edu.au/ necg-course-info/current

For further conversation with John about some of the key learning and teaching initiatives in the Faculty of Engineering, visit the online discussion forum at: www.itl.usyd.edu.au/synergy/forum

or contact him via email at: jc@aciic.eng.usyd.edu.au