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Online PLUS traditional teaching: Are we mad?

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BACKGROUND

Online learning has infiltrated tertiary learning and teaching applications. It has also presented some serious challenges for learning and teaching outcomes, not the least of which is reducing / eliminating face-to-face contact and interaction with students. Nevertheless, online learning presents enrichment in the construction of student learning through opportunities unfathomable for most university teachers when they were students. In this review, we present our ongoing journey in integrating web-support into teaching undergraduate units in early childhood, the lessons we learned, and the pedagogical / curriculum reflections and revisions we undertook in quest of maximising teaching learning outcomes for our students. We conclude at this point in our journey, that online learning is an indispensable learning/teaching tool that contributes to student empowerment when it enriches but does not displace face-to-face teaching. Additionally, we maintain that relational and socio-emotional contexts of learning enriched with online applications are paramount in obtaining maximal student gains.

Information and communication technologies (ICT) have visibly transformed teaching and learning, and present the potential to support constructivist approaches that develop learning environments more conducive to self-regulated learning (Candy, Crebert, & O'Leary, 1994). Benefits of web-supported learning include flexibility of access, and maintenance of parity between the learning experiences of internal (on campus) and external (distance) university students. Additionally, the introduction of new learning approaches may encourage more self-reflection, and the provision of access to interactive and ongoing communications may encourage participation towards construction of students' own learning experiences. Attributes such as the organisation and structure of information using hypertext environments, the interactivity available through feedback mechanisms, and the control the user has in determining the pathway and rate of progression through materials may better cater for individual differences and learning styles of students (Talay-Ongan & Gosper, 2000).

An often perceived benefit of online teaching for university teachers is the expectation that online formats may, in fact, reduce teaching loads, a considerable advantage given the reduced funding and significantly increased staff loads at tertiary teaching institutions, at least in Australia. However, this was not the

experience of the authors. Arguably, in a scenario where teachers make the initial investment of time and resources to prepare an online unit, and decide that ICT-based delivery supplants face-to-face teaching, some savings from lecturing and conducting tutorials may well be realised, although these savings are prone to be displaced by additional online communications.

These real and expected benefits associated with online learning environments have provided teachers and researchers with opportunities to bring fresh perspectives into teaching pedagogy. Yet, as with any innovation, the question that needs to be addressed is: which combinations of instructional design, ICT, and teaching practice variables yield the best learning teaching outcomes, and how can these be calibrated?

Our experience of teaching undergraduate core units which are fully online on a WebCT platform over the past five years is viewed in such a context: it has enabled us to revisit our teaching practice, thus making reflections and revisions imperative. This presentation will summarise the context and the outcomes of this ongoing journey into uncharted territory that we now call home.

PHASE I: EARLY EXPERIENCES

The initial flexible/online learning package (ECH 213 in 1998) employed multiple technologies such as weekly face-to-face (audiotaped) lectures, a text book, as well as a unit web site, which contained three major components: *course information, curriculum content, and communication facilities.*

- ◆ *Course information* included clearly identified goals and objectives for the unit, a unit outline pacing the learning activities for the semester, a description of the assessment activities, and an extensive reference list for further reading and internet resources.
- ◆ *The curriculum content* included the lecture overheads, and weekly tutorial exercises which contained case studies, application and reflection questions and self-assessment tasks. These invited self-explanations and personal vignettes to be embedded in student responses which became the platform for further discussions on the web site.
- ◆ *The communication facility* contained a bulletin board and e-mail. The students were encouraged to respond to the tutorial exercises by posting their comments on the bulletin board; they were also encouraged to respond to others' postings and engage in arguments and discussions.

In the first application of ECH213, the face-to-face tutorial sessions were essentially replaced by the teaching and learning activities designed on the web tutorials for the internally enrolled students. Thus both internal and external students had comparable experiences in that they had access to lectures (in person or through audio tapes), online only tutorial activities, and a communication platform to post and share experiences.

Student evaluations of the unit indicated that while some attributes of this mode of learning were responded to very favourably, e.g., being able to access the online lecture notes prior to lectures, many other facets of the student responses invited us to review our practice. Only half of the students expressed satisfaction with overall web-based learning experience, and only 40% of the students wished that more units were delivered in a similar format (please see Table 1 for details). These results strongly suggested that in our enthusiasm for wanting to incorporate ICT into our teaching, we had cut the students adrift in cyberspace.

In its 1999 applications, most of the unit parameters and online delivery mode were replicated, except that face to face tutorials were now offered on a fortnightly and voluntary bases for the internally enrolled students. A significant jump in the student satisfaction was noted as determined by the unit evaluations containing the same questions as the previous year (see Table 1, *italics*). The increase in students' satisfaction with the unit was attributed to restoration of the *availability* (as opposed to the compulsory attendance) of face-to-face tutorials.

	ECH213, 1998 N=115			ECH 213, 1999 n=108		
	SA+A	D+SD	Mean	SA+A	D+SD	Mean
1. I was able to find my way easily around the web site	74%	10%	3.8	82%	3%	4.2
2. Links to course materials are always in working order.	63%	16%	3.6	82%	6%	4.1
3. Training offered on campus for the web site was sufficient.	58%	4%	3.6	49%	5%	3.8
4. My computer skills were good enough for web-based learning.	79%	9%	3.9	89%	4%	4.2
5. Face-to-face, telephone and computer communications met my needs for staff assistance.	39%	29%	3	78%	7%	4.1
6. Compared to traditional tutorials, I was better able to interact through the web.	28%	30%	2.9	61%	8%	3.7
7. Accessing lecture notes prior to the lecture was helpful.	83%	2%	4.4	95%	0%	4.7
8. How would you rate the contents and quality of web materials (excellent-v. poor)	84%	6%	4.1	95%	0%	4.6
9. How would you rate the overall web-based learning experience in this unit? “	51%	21%	3.4	85%	4%	4.2
10. I would like to see more units delivered on a web-supported format.	40%	33%	3	67%	9%	3.9

Table 1: Pooled student positive responses (Strongly agree and Agree; SA+A) versus negative responses (Disagree and Strongly disagree; D+SD), and the value mean, where 5= Strongly agree, 4= Agree, 3= Neutral, 2= Disagree and 1= Strongly disagree for ECH 213 in 1998 and 1999.

PHASE II: CURRICULUM RE-DESIGN

Towards uncovering the impact of ICT as an independent variable on teaching learning outcomes, the first phase of flexible/online delivery and its evaluations made a few basics abundantly clear:

- online learning was here to stay as its benefits by far outweighed the traditional teaching modes, particularly for distance students;
- traditional face-to-face tutorial teaching needed to be available, at least as an option, to maximise the benefits of online learning experiences internal students;
- the expectation that online teaching was to reduce staff loads was a myth, as it at least doubled the time and effort expended in the process; and
- technical skills of the teaching staff coordinating such online units need to be upgraded, as they were now expected to manage online learning environments as well as their content.

Thus we tend to think of Phase I as a liberating experience, in that having accepted these issues, we worked harder, longer, and had to extend our skills, but we were now at liberty to focus in on teaching

learning outcomes that are related to content, and not just form. In other words, our debate was not whether online learning facilitated learning or not; rather, we focussed in on evaluating every element of the course content and curricula, and treated online learning as yet another variable in learning which had to be fine tuned. These insights were brought to bear in the re-designing of another undergraduate unit in 2000, ECH 120 Teachers as Researchers, which was also fully online. We made it our business to scrutinise every assignment, wording and scope of the unit outline, content of lectures and tutorials, relative marking weight of different tasks, the manner in which online communication facilities were to be used in order to maximise interactivity and argument. We also sought informal and formal feedback from the students about their experiences regarding each element. Additionally, this unit had to integrate into its context the acquisition of generic ITC skills and literacies, as the showcase of Macquarie University Targetted Flagship Grant in Generic Skills through a collaborative project between the IEC and the Library.

ECH 120 TEACHERS AS RESEARCHERS

It is helpful, at this point, to take a closer look at this unit, which exemplifies a multi-layered innovative teaching experience which came about as a result of redesigning a core unit *Early Childhood Teachers as Researchers* in the undergraduate program in Bachelor of Education (Early Childhood Education) at the Institute of Early Childhood (IEC), Macquarie University, Sydney. The unit had been offered at the third year of studies since 1998; however, student feedback indicated that the concepts and skills acquired in it were viewed as being crucially important at the first year level as it was foundational to the students' academic careers. In 2000, the program was modified such that this core unit was indeed incorporated within first year of studies of teacher training at the Institute.

The delivery format as a third-year unit was weekly two-hour lectures and one hour face-to-face tutorial over 11 teaching weeks, as well as fully online presentation with all its content (lectures, tutorials, resource materials) and communications (bulletin board and e-mail); the decision had already been made that traditional and online modes of delivery were to complement one another.

While these basic parameters were maintained as the unit was redesigned as a first-year offering, other significant changes were put in place at its conceptualisation and throughout its development, driven by principles of sound pedagogical practice such as collaborative and constructivist learning and teaching (Walker, 1995; Grabinger, 1996), contextualised and problem-based learning (Schank, Fano, Jona, & Bell, 1994; Herrington & Oliver, 1999) and integration of generic information and communication technology and literacy skills into the academic preparation of incoming university students (Bruce, 1998; Candy, 2000). The process of redesigning and implementing this unit in fact, became a facilitated journey because of expected and unexpected collaborations and outcomes, which are explained in detail elsewhere (Talay-Ongan, Edmonds, Gosper and McNaught, 2002). These features are summarised below.

Contextualisation of ICT literacy skills

A central design feature of the unit was the integration and contextualisation of ICT skills within its scope. This was framed by the increasing necessity of ICT literacy in teaching and learning applications not only with emphasis on online/flexible unit delivery, but also electronic information access and use skills (online databases and finding scholarly material on the Internet). The collaboration between the IT&TU of the Library and IEC made for an ideal learning environment for students as the ICT skills and competencies acquired were interwoven into online learning and the unit requirements and assignments, ensuring a meaningful context of application of these skills and their generalisation.

In its first year of re-design in 2000, considerable favourable outcomes were realised in the unit as judged by student evaluations. However, its implementation also brought with it a set of constraints: the major one was the relinquishing of five tutorial hours during the teaching weeks in which the ICT workshops took place. Many students had high support needs and needed the face-to-face scaffolding provided for the unit content in the tutorials; paradoxically, they also derived significant and long-lasting benefits from these workshops. Online tutorials and communications were helpful in assisting student learning but many students felt that more face-to-face tutorials were desirable.

Learning about research while researching one's learning

As this was an opportunity to implement innovative teaching practices, an overarching approach to the unit was that the teachers were to research how the students acquired concepts and skills in research while students simultaneously researched an aspect of their own learning. Thus the students were the participants in the teaching team's project, while they had to work in collaborative teams to produce a research project as a part of their assessment. The student research projects systematically analysed an aspect of the processes involved in constructing their knowledge and skills in this unit. This initiative allowed the students to learn by doing.

Collaborative learning and teaching

Collaborative learning was integrated to the student assessment through the generation of a hands-on research project. In a process of multi-layered collaborative teaching and learning, a community of learners evolved, in which both the teachers and the learners were valued for their learning and jointly constructed the 'researcher' identities (Wenger, 1998). These multi-level collaborations included those between the Library and the unit teaching team in course re-design and publications, collaborative panel teaching (with often diverse points of view towards approaches to research), online collaborations through the bulletin board, virtual, as well as face-to-face tutorials, and students in collaborative research teams. In general, collaborative teams were reported to pose more difficulties for distance education students; although online communications were a great facilitator, distance and lack of adequate meeting opportunities hampered efforts in obtaining optimal outcomes.

Skill development in being consumers as well as producers of research

The unit design needed to integrate both perspectives: teachers as consumers of research with a strong understanding of rigorous research methodology and critical evaluation skills, as well as teachers as producers of research in their professional practice. As consumers of research, students needed considerable content and an understanding of more traditional research paradigms, whereas as producers of research, they needed an appreciation of more postmodernist perspectives in teacher education and practice, where reflective practice, documentation and action research are highly valued.

ONGOING SAGA: EVALUATIONS, REFLECTIONS AND REVISIONS

The presentation of ECH 120 as a core first-year unit resulted in the enrolment of quite large numbers of students (about 350) from all levels of study at IEC. This necessitated the formation of about 10 tutorial groups, and thus a larger teaching team. We share some of our collective and evolving experiences below.

Providing for distance students

At the Institute of Early Childhood, at Macquarie University, External students have been traditionally provided for by the provision of printed unit materials (unit outline and book of readings), one on-campus school day, and audio recorded lectures. While lecturers and tutors allocate time for individual phone contact, often the only contact that external students have with teaching staff and other students is during the on-campus day. In comparison to the traditional distance learning materials and opportunities, online

learning has revolutionised the experiences for the distance students and has made seamless delivery possible.

In particular, the provision of the online component of ECH120 heralded a noticeable increase in the amount of communication taking place between external students, their peers, and their teachers. These students, often juggling their studies with the multiple responsibilities of family and work, benefited greatly from being able to pose questions to their teaching and learning community, with the online bulletin boards being a non-threatening means of seeking clarification and gaining feedback about unit assessments and content. Just as importantly, the bulletin boards enabled the students to express opinions, share personal and professional experiences, and support one another as they strive to understand and contextualise the new concepts and information presented in the unit.

In the same way that the online component significantly changed the learning environment for external students, new challenges confronted the teaching staff. Time had to be allocated on a regular basis to monitor and respond to the communications of external students. Teaching on-line was just as demanding as face-to-face teaching, and more time consuming, as students took advantage of the fact that there was ‘someone out there’ to answer their questions. Communications were often posted late at night and during weekends, reflecting the time when external students were able to concentrate on their studies – times when contact with their teachers would otherwise have been impossible. The demands on the teaching staff increased, as they endeavored to respond promptly to such communications. However, the benefits for the students were clearly apparent in the ways that they expressed satisfaction at the level of support and scaffolding provided by their teachers via the online component.

Student evaluations: in Year 2000

In 2000, students in ECH120 rated the following as being important for their learning experience (in descending order):

Access to lecture notes prior to the lectures	90.7%	weekly application and reflection exercises	56.9%
direct online access to the Library	89.8%	parity between external and internal learning/teaching	43.4%
flexibility of access to unit materials	87.3%	digitally recorded online lectures	25.3%
online communication with fellow students and staff	75.9%	digital visual images of staff and fellow students	18.9%
opportunities for collaborative work	73.4%	online submission of assignments	17.7%
online bulletin board postings and discussions	70.8%		

98% of the students rated the overall IT-supported experience in ECH120 as being satisfactory or better and only 9.2% responded that they would disagree or strongly disagree with the statement 'Compared to traditional University teaching, I prefer the ECH120 approach offering a combination of online and face-to-face meetings.'

Students felt that the following were the *best aspects* of the unit in 2000:

- Online learning: unit web site, bulletin board, speed of response to queries by staff, feeling a part of the unit community, availability of lecture notes prior to lectures, and ICT library training.
- Course content and delivery: Tutors and teachers (support, personality and enthusiasm), staff experiences in research, relevance of subject content to further study, group work, being able to practice what was learned, and tutorials.

Although these results were quite encouraging, we also had to pay attention to those attributes of the unit that students felt *could be improved*. Content analysis of the open ended questions revealed the following responses as being common problematic themes:

- Computer access, dissatisfaction with the textbook, easy access to a glossary;
- Confusing lectures in panel presentations, and more comprehensive, clear and better organized unit outline;
- Too demanding for students and not commensurate with a 3 credit point unit;
- Difficulties with collaboration, an additional on-campus day, and more face-to-face time, which had been compromised by allotting some tutorial times to ICT training.

In Year 2001

Clearly, 2001 was to be a re-design opportunity for the unit in efforts of calibrating it for better learning teaching outcomes. The following were done in response to the feedback from our inaugural year:

- Collaborative experiences were valued highly and remain pivotal in this unit as a Collaborative Research Project which spans the semester, culminating in a hands-on research project produced and delivered by student teams.
- The unit outline has been re-written with much more attention to detail to assessment tasks, which have also been scaffolded and staged.
- An online ‘academic writing and critical thinking skills’ module has been incorporated into the unit as a series of tutorial and an assessment tasks;
- The IT training sessions have been allocated the first week of tutorials to enable students to access and navigate their unit web site and communication facilities. LIBSOL (Libraries On Line), encompassing electronic data base research skills through citations, abstracts and journal articles have now been modularized in an online component which is available for students from week 1, complete with a built-in assessment task (quiz; 5%). The final component of the IT skills, ‘accessing the internet for scholarly materials’ has been incorporated into a hands-on lecture hour demonstration by ITTU supported by information booklets to parallel the learning experiences in week 6. These applications have meant that weekly face-to-face tutorial hours can be maintained after the lectures.
- In 2001 external students were provided with an on-campus day in week 1 in which they acquired their online unit access and navigation training as well as the formation of their collaborative research teams, replete with their research questions before they go home. The online tutorials and communications as well as the feedback on their stage 1 of their project enabled them to complete and present their collaborative research project on on-campus day 2 in week 10.
- The final examination (40%), a requirement for core units, was designed to have a ‘problem-based approach’ where the students will be asked to solve problems likely to be encountered in professional life.
- The text book has been changed as recommended by the students.

The end of the semester student evaluations of ECH 120 in 2001 almost dovetailed the results presented above - 96% rated their overall web-supported learning experience positively, (satisfactory, 20%; good, 51%; and excellent, 25%), and 65% preferred the combination of online and traditional teaching methods. Nearly 87% felt that the online research and communication skills they had acquired in this unit were relevant for further study and professional development. When asked what aspects of the unit could be improved, students now indicated only three items: that the work load was too much for a 3 credit-point unit, that downloading the bulletin board took too long, and that external students had difficulty working collaboratively.

In Year 2002

Our job of recalibrating the unit in 2002 became less arduous. Nevertheless, the unit outline was scrutinised by the team to enhance clarity, minor adjustments in assessment tasks were trialled (i.e., increasing the overall weight of CRP, and bringing the short essay writing task to Week 3 from Week 12),

and online bulletin boards were constructed for smaller chunks of online communications which were cleared after 3-4 weeks. Additionally, a third on-campus day was instituted specifically for distance students (but it was open to all), which was compulsory if they had not had a chance to work collaboratively yet. On this day, the unit coordinator is on deck to review lecture materials and consult with student teams all day. The unit has not been formally evaluated yet, however, the fact that nearly 50 students came to this collaboration day was taken as an indication of addressing a genuine student need.

International students

In 2002, 13 international Early Childhood Education students enrolled in ECH 120. Of these, five students withdrew without penalty. All eight students who continued to be enrolled in ECH120 received support from staff specifically employed by the Institute of Early Childhood to support all international Early Childhood Education students in their first four semesters of study. This was in addition to the support they could also access from the community of learners in ECH 120 – the teaching team and other students – either face to face or electronically. Those students lacking confidence in their English language proficiency were particularly anxious about their participation on the Bulletin Board and about their oral presentation: the expressive language skills of writing and speaking are a source of concern for many non-native English speakers as their perceived inadequacies are exposed to others.

International students appreciated the self-assessment tasks that required them to learn new skills such as accessing e-databases and academic writing and research. However, the opportunity to work collaboratively was a mixed experience for some international students and depended on the competence and commitment of the other team members. This, no doubt, would have also been the case for domestic students.

EMPOWERMENT: CONTENT AND RELATIONAL CONTEXTS

The multifaceted nature of experience with ECH 120 has culminated in the realisation of a very significant, and often understated dimension of learning and teaching outcomes: empowerment. Empowerment is a frequently used term, and usually suggests the ability of individuals, to become aware of their powers in being an able decision maker and feeling in charge, often facilitated by personal experiences and interpersonal relations. It can readily be argued in our information age, that knowledge is power, and thus universities, among many other contexts of knowledge construction, are vehicles for acquiring empowerment for all students. Yet, we have found more specific applications of student empowerment through participation in ECH 120. Of these, one was a function of the *content* of the unit, while the other was achieved through a supportive emotional climate, and warm *interpersonal relations* as expressed in online communications.

Course content

The unit ECH 120 incorporates many foundational skills and competencies such as electronic information access and evaluation skills, online learning, academic writing skills, research conducting and evaluating competencies, all of which are fundamental in university study. As such, the content imparted to the students (and the knowledge they construct) is empowering, as it enables them to undertake other academic tasks successfully.

The unit design allowed the students to submit a series of small-scale assessment tasks, each one forming the basis skills and knowledge for the next. Accomplishments in successive steps with progressive feedback towards the building of the Collaborative Research Report meant growth over time, a framework for dynamic, scaffolded, mutually-constructed competencies. Thus students too, experienced a

journey from a sense of being overwhelmed and anxious to accomplishment and empowerment through self-application over the course of the semester. The italicised segments from student evaluations below are illustrative of these aspects:

It (the unit) extended my learning abilities: programming and time management of topic areas that spilled over into my other units and have now become a study habit. It pushed me into becoming a more knowledgeable of Library resource and electronic resource and sparked interest in seeking areas normally outside my referenced parameters of readings enclosed in study guides. Despite its intense and challenging format the unit is incredibly useful; a solid foundation to future studies.

OCS (days) were extremely helpful and nurturing, and step by step progression was great..Thank you for the support and scaffolding of the teaching team. Your enthusiasm and motivation have helped me through what initially seemed to be an overwhelming subject.

The fact that the unit outline was so comprehensive, and was sent during the holidays, which allowed for considerable time to digest...that week in Week 2, we were required to 'fake it till we make it' with academic piece of writing including research terminology. I enjoyed the challenge and rose to meet it; it benchmarked the unit for me. I really enjoyed this unit and feel that not only will I benefit from the epistemology of the unit content, but also felt appreciated in the way I was treated, as a student, but also as an adult learner.

The way we did our assessments in small chunks was fantastic! Initially reading the unit outline, it seemed so overwhelming but as we did each small assessment we slowly climbed the mountain and now we have almost conquered it..Overall, it was a fantastic unit (I) thoroughly recommend it, skills I have gained are going to assist my further university studies so much

Although I was at first put off about the online aspects of the unit, I gradually looked upon online learning as favourable and informative during my studies. The Bulletin Board is a good way of staying in touch and up to date with unit requirements. ECH 120 is step by step hands on learning which helps us make sense of the unit material in a meaningful way.

Interpersonal relations

Teaching staff was aware of the demands the unit placed on students, for many of whom such an academic experience was novel and anxiety-provoking. No overt decision was made to pay special attention to reduce student stress by relational and communicative strategies. Yet, the teaching styles and the personality characteristics of the members of the teaching team jointly, mutually and comfortably culminated in interactions which provided support, affirmations, humour, respect for student needs, and responsive communications. An emotional climate was quickly created through personal and online communications, where students were encouraged for perseverance in the challenges presented by the unit, recognised and supported for their affective states, and a collective spirit of humour and sharing of vulnerabilities were welcomed. A true spirit of community of learners in which students and teachers mutually contribute to the construction of knowledge in a safe environment was built. Additionally, students supported and scaffolded each other with their queries in a spirit of camaraderie. We found that attending to the emotional agenda, the underbelly of all human pursuits, had a facilitative effect as much for the students as for the teachers. A climate of high intellectual demand coupled with high emotional and communicative support appeared to be winning formula, indeed.

Analyses of online communications

There were in excess of 3000 bits of communication on the unit web site in 2001, many of which had the function of fulfilling the requirements of the unit by responding to set tasks. Other functions focused on information seeking or providing, and acknowledging and/or giving emotional support and motivation. These were themes which became quite obvious, and functions which emerged which were quite spontaneous in these messages over the weeks:

- ◆ Students seem to feel empowered by completing the online modules, and especially after completing their assignments. This is readily and directly acknowledged, e.g 'after completing xyz task, I can now do abc'. In fact, of the 227 posting to one tutor's bulletin board, 77 (i.e., 34%) voluntarily stated that they had learned x, y or z from the course which would then enable them to do a, b, or c, with particular reference to other units and their professional lives as contexts. Many third year students expressed their amazement at how they had survived without this knowledge thus far, and how helpful it would have been to their study had it been in their first year.
- ◆ Earlier messages emphasise empowerment through online and ICT skills, where as those towards the end of the semester tend to reflect on research critical thinking skills as an attitude.
- ◆ Over the weeks, it is evident that students become more enthusiastic and confident about their research projects and the value of doing the course, as a whole. They also reflect on various research issues (reliability and ethics being the predominant ones) with appreciation and concern over and beyond their own projects. By the end of the unit, many students seem to have developed a cautiously confident image of the self as a researcher.
- ◆ Students, increasing frequency and intensity throughout the semester, posted messages which indicated their surprise and appreciation for the warmth and the support they were given by their teachers, and openly and communally expressed their thanks. Many saw their teachers as mentors and the unit as a journey, through which they had achieved heights they initially thought, were unlikely.

CONCLUSIONS

Ongoing integration of innovation, revision and critical evaluation into our teaching practice may increase our workloads, but it also increases our job satisfaction immensely. Just when we think we have calibrated the unit to achieve maximal benefits, other variables - usually unforeseen- compel us to rethink and redesign; again! In fact, the unit outline for ECH120 in 2003 has been substantially revised and circulated already, with more changes likely to occur after we examine student evaluations. We feel teaching is a quest of the mind, and of the heart, perhaps in equal measures. Additionally, collaborative teaching teams, when they are functional and in harmony, are a significant asset to obtaining the desired outcomes. Being passionate about our craft seems to inspire and motivate students, conquering challenges appears to empower students as well as teachers, and shared laughter and angst too, seem to lighten our loads. We maintain that both teaching and learning are emotionally driven.

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