Closing the Loop: The Relationship between Instructor-reflective Practice and Students' Satisfaction and Quality Outcomes

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This research outlines a case study involving over 450 students whereby 'closing the loop' between using student feedback to inform instructor-reflection and development led to improved student satisfaction and quality of projects. This research was a 5-year longitudinal study and reports on the results of an action-learning methodology informed by systematic professional development. The instructors were within the business technology discipline and used students' feedback to make ongoing developments to the curriculum, and teaching and assessment practices. Sustained action research incorporating a critical friend to facilitate reflection and problem-solving was adopted. A combination of methods for collecting data was employed; for example, student feedback questionnaires, student meetings, and instructor/professional developer journaling. The outcomes included significantly higher scores in the student feedback instrument in comparison to the school average; and increases in student satisfaction ratings and responses across the years. The overall quality of the final project also increased across subsequent years. For the academics outcomes included increased feelings of empowerment with making sound teaching decisions; increased satisfaction in observing and supporting good teaching; developing cognitively challenging assessments that were more explicit and well structured; and course work and assessments that embedded team-working and critical thinking skills.

Purpose of the Research

This paper explores the relationship between instructor professional development resulting in implementation of changes in the university classroom, and students' responses to their learning environment, including assessments. This is referred to as 'closing the loop' which encompasses the professional development cycle of instructor-reflective practice, implementation of changes in instructional practices and assessment, informing students of the changes as a result of their feedback, and the impact on students' perceptions of the learning environment. This research used an action research framework involving three key stakeholders – the instructors, students, and a professional developer who was a critical friend and mentor. Data collected from all three perspectives were used to develop action plans and to implement change. This was a five-year longitudinal study of the course developments and encompassed two instructors. Initial findings from this research were published in 2006 with the first instructor's data. However, in second semester 2006 the university implemented a new student feedback questionnaire which was significantly different to the initial data gathering instrument used between 2002 and early 2006. The 2006-7 data includes findings for both instructors. This paper offers the opportunity to compare the data across two different student feedback instruments.

Literature Review

Action Research as Effective Professional Development

Over the past decade in Australian universities, similar to those in most western countries, there has been an increasing emphasis on the importance of good teaching and learning practices. This trend was evidenced by various federal government policy 'white papers' documents (DEST, 2002, 2004; DETYA, 2000). A significant change to university practices was the introduction in 2006 of mandated systematic 'student feedback on learning experiences'. These data influence Government funding to universities. Therefore, student feedback is considered a significant piece of evidence indicative of the quality of teaching and learning.

Although student feedback as a source of information appears to be largely administratively important Ramsden (2003) and other researchers (Marsh & Roche, 1994; Prosser & Barrie, 2000; Prosser & Trigwell, 1999) advocate reflecting on evidence from the classroom to improve teaching practices. Ramsden stated …

> *Good academic development engages us in the excitement of discovery and makes learning about teaching as exhilarating as doing research …. These* [accomplished] *teachers do not segregate practice and theory; on the contrary, they seek productive relations between them to establish better ways of helping their students to learn …. The key to professionalism is learning how to fuse theory and practice. … For most lecturers, this will mean working with people who are active in research and whose approach to staff development is driven by a spirit of stimulating inquiry (Ramsden, 2003, p.245).*

Most university academic development centres advocate ongoing, reflective practice, and action research as a sound approach to establishing continuous professional growth of instructors. Gay, Mills, and Airasian (2006) identified the professional development advantages of action research …

> *it [is] done by teachers and for teachers and students, not research done on them, and as such is a dynamic and responsive model that can be adapted to different contexts and purposes (Mills, 2003, cited in Gay et al., 2006, p.500).*

Stringer (2004) posited action research was extremely powerful in bringing about changes in teachers' behaviours through their engagement in analysis and problem solving processes. This is particularly

important in the university context where students frequently do not perceive instructors to have teaching as their priority over research. As Mills indicated, instructors who engage in action research and who overtly involve student perspectives in their work have the "opportunity to model for their students how knowledge is created" (Mills, 2000, p.11). Working with colleagues using students' feedback and reviewing the quality of students' assessment products to institute educationally sound practices can be a powerful tool of professional development for the instructor (Scott & Dixon, in press; Scott & Issa, 2006a; Scott & Issa, 2006b).

(Scott & Dixon, in press; Scott, Shelleyann & Issa, Tomayess, 2006; Scott, S & Issa, T, 2006; Scott, S & Issa, T 2006).

Mills' *Dialectic Action Research Spiral* in Figure 1 (Mills, 2000, p.20; Gay, Mills, and Airasian, 2006) was used in this longitudinal study. In this cycle the initial instructor (later to be paired with a colleague teaching the same course) and their 'critical friend' (the business division's professional developer) identified areas of focus through analyses of student feedback data. They also used additional data sources such as instructor evaluation of project work, and informal interview data with class representatives. As Woolcott (1989, in Mills, 2000, p.19) identified, this process provided "'provocative and constructive ways' of thinking about their work" and enabled them to take action within their classroom practices.

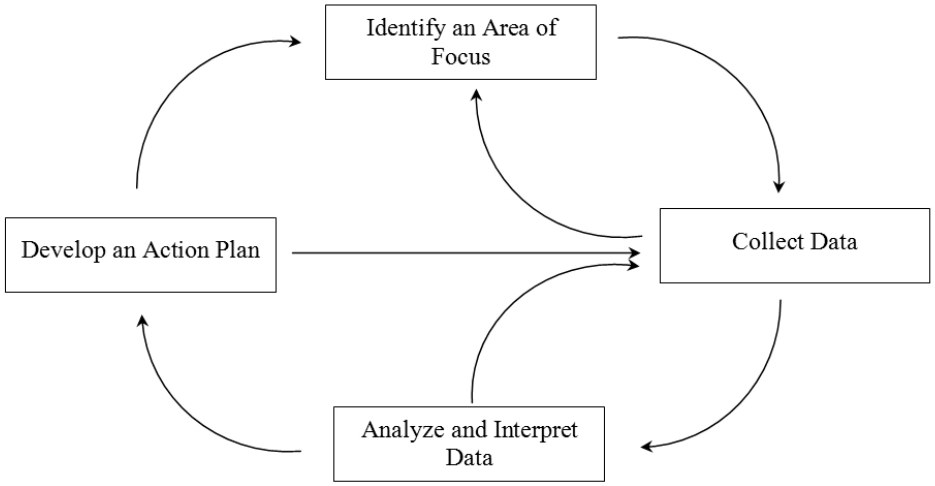

Figure 1: Mills' Dialectic Action Research Spiral (Mills, 2000, p.20; Gay, Mills, and Airasian, 2006, p.501)

Student Feedback as Useful Data

Mills' model has 'teacher reflection on data' as a key to informing action plans to improve practice. Student feedback has had a controversial history within universities with some "resistance [being] … based on the ideas that students are not competent to make such judgements or … ratings are influenced by teachers' popularity rather than their effectiveness" (Richardson, 2005, p.407). Marsh (1987) and Ramsden (2003), however, advocate for these data as useful in guiding teacher development. Marsh's work on the validity of university student feedback led him to state "student ratings are clearly multidimensional, quite reliable, reasonably valid, relatively uncontaminated by many variables often seen as sources of potential bias, and are seen to be useful by students, faculty,

administrators" (Marsh, 1987, in Richardson, 2005, p.392). Referring to Kember's (2002) work, Richardson (2005, p.392) identified that simply collecting student feedback did not in itself result in improvements in the quality of the teaching or improvement in students' learning; rather teachers needed to engage in reflection and implementation of change. Instructors must **use** these data to inform teaching and assessment strategies, and enhance their understandings about teaching. Drawing upon Spencer and Schmelkin's work (2002, in Richardson, 2005), he identified the need to keep students informed of how their feedback was being used, otherwise they tended to discount the value of genuinely engaging – in other words 'closing the loop' on the reflective process. Academics can also obtain benefits from engaging with educational experts and literature to further inform their teaching. Support and advice can facilitate the creation of active and interactive learning experiences, and of appropriate, transparent and educationally sound assessment processes. The payoff for this effort is the resultant positive attitude of students towards their instructor and to the unit (Ramsden, 2003).

Procedure

Establishing the collaboration

Over the course of five years starting in 2002, a mentoring/critical friend relationship was established between a professional developer within a Business school and the first instructor, who was teaching within the information technology discipline. In the final year of the study the instructor teamed up with a second instructor to continue and expand their professional development. Subsequent to the professional developer leaving the institution in late 2006, the action research collaboration continued between the two instructors in a sustained professional development relationship. These technology experts had no formal background in education but were interested in enhancing their teaching. The action research cycle was initiated with the view to increase the 1) educational value of the teaching, 2) integration of professional skills, such as team work into the coursework 3) cognitive demand of the assessment tasks, and 4) instructors' understandings of best educational practice. The professional development relationship involved reflection, discussion, problem solving, and resource development. Meetings were on demand and followed the flow of the cycle.

Collecting data - Summative evaluation data were collected in the unit using a student feedback questionnaire which was systematically administered at the conclusion of each semester. Additionally, the instructors maintained an informal journal of their observations of student work and interactions with peers in class. Class representatives' insights were noted in informal meetings with the instructor and served to validate or explain responses in the questionnaire. As advised by Turhan and associates (2005), greater emphasis was placed on the rich qualitative data from the questionnaire and student representatives as these facilitated the identification of areas needing attention more than quantitative ratings.

Identifying an area of focus – From the feedback, the quality of student assessment and workload were targeted as aspects requiring immediate attention (see Figure 2). Students were informed at the start of each semester how the previous cohorts' feedback had been used for curriculum review processes. Students understood they were important partners in the ongoing development of the unit and teaching. Only one or two aspects were targeted for change each semester, as radically altering the unit in one semester would confound the results. The changes included:

- altering the distribution of marks for various assessment tasks;
- creating greater structure in group assessment, including marking peer and self-assessment;
- designing learning experiences which supported group projects;

- developing a contracted 'agreement' document (lodged with the instructor and all group members) which formalised group members' distribution of workload, established expectations, contact information, and required students to establish an appropriate timeline for the project;
- introducing a conflict resolution process (designed to structure the processes of mediation and negotiation);
- replacing low cognitive-level weekly quizzes with fewer more-cognitively demanding mini tests distributed across the semester;
- altering the question types and format in the final examination - the 'new style' exam was adopted for the mid-semester and final exams. The exams/test were divided into three sections – low (multiple choice), medium (short answer), and high cognitive demand (a short report on a case study-style scenario) with explicit mark weightings for each question.
- providing explicit marking keys/rubrics for the assignment at the commencement of the unit.

Analysing and interpreting the data - The professional developer and instructor(s) met periodically and analysed these data. Students' open-ended comments would be scanned for constructive suggestions and compared against sound educational practice, the unit objectives, students' outcomes from assessment data, and other pragmatic matters. Additionally, the instructor tracked the changes to major assessment tasks and noted the quality of the student assessments. When conflicting comments were found meetings were held with student representatives to clarify the issues. The collaborators also celebrated successes.

Developing an action plan – After engaging in considerable reflection, discussion, and reading of educational materials, an action plan was established to create/plan innovations or new strategies.

Student feedback as the data source for systematic action research

The main student feedback instrument in this study was a modification of Ramsden's (1991) Course Experience Questionnaire. Changes were superficial and included modifying identifiers of 'lecturer' and 'tutor' to a uniform 'the staff member' as this instrument was administered in tutorial groups. Five scales were included, 'good teaching', 'clear goals and standards', 'appropriate workload', 'appropriate assessment', 'generic skills', and an 'overall satisfaction with the quality of the unit' item (see Appendix 1). A Likert attitudinal scale of 'strongly disagree', 'disagree', 'neither disagree nor agree', 'agree' and 'strongly agree' was used. Additionally, the word 'course' was changed to 'unit' and three open-ended items were included, namely, *"what were the best aspects of the unit?"; "what aspects of the unit are most in need of improvement?"*; and, *"suggest how the staff member could improve the learning experience"*. The survey was administered by external administrators who explained the purpose of the survey, who students were providing feedback on, and how their data were going to be used. This process was standardised across the Business division and was administered centrally every semester in large units (more than 100 students enrolled).

Mid year 2006, a new student feedback questionnaire was introduced for use across the entire university. This was a much simpler instrument containing 13 multidimensional items. Two items related to the clarity and value of learning outcomes, one involved the how the resources assisted students to learn, two item on whether assessments and workload affected students capacity to learn, one item on the quality of the teaching and four items on students' motivation, persistence with difficult tasks, reflectivity and level of satisfaction in the unit. The final two items were collecting open-ended feedback on the students' suggestions for improvement. In the next semester a second instrument was introduced which explored some teaching related items. As these online instruments were marginally different to the previous questionnaire there were some concerns with comparing all

items with the results from 2000- 2005 to 2006-7 data; some teaching related items were similar enough to be able to compare with the original survey.

Results

These results combine quantitative and qualitative data and are outlined together in order to provide a richer picture of the authors' interpretation of students' perspectives. The student feedback data presented was an aggregate of all tutorial groups across eight semester or nine teaching periods (N=643). The response rate in the student first feedback instrument in 2003 was 87%, in 2004 - 78%, 77% in 2005 and 61% in 2006 (semester 1). The online instruments administered in Semester 1, 2007 and Semester 2, 2007 yielded lower response rates (N=9 of 21% and N=9 and 30% response rates respectively).

Figure 2 outlines the percent agreement (includes 'agree' and 'strongly agree') for each scale. Each scale is composed of a number of items which can be identified in Appendix 1. It must be noted that students provided balanced feedback and this was consistent across all of the years of the study. Open-ended responses presented are representative and are in order of most to least frequently cited.

Good teaching

The 'good teaching' scale reports on students' agreement with items related to the teacher's ability to motivate students, commitment and scaffolding of learning by providing good quality feedback; empathy and approachableness; and capacity to make the unit interesting (see Appendix 1). The teaching staff received higher ratings (2003 – 66%; 2004 – 69%; 2005 – 68%; S1, 2006 – 81%) in comparison with other instructors within the school (58%). There was a 43% response rate (N=17) in Semester 2 2006. Results from the new instrument revealed the majority of students perceived 'the learning experiences helped them to achieve the learning outcomes' (81%); 'the learning resources' were useful to learning (88%); teacher feedback assisted learning (88%); and the quality of teaching assisted them to learn (82%). In Semester 1, 2007 a second version of the new instrument was trialled which focussed on "teacher qualities". Of the nine who responded there was total agreement (100%) that the instructor was well organised; communicates clearly; was approachable; provided useful feedback; appeared knowledgeable in this subject area; was enthusiastic in teaching; and was an effective teacher. Semester 2, 2007 indicated similar results across the other items, although not all agreed she communicated effectively (78%).

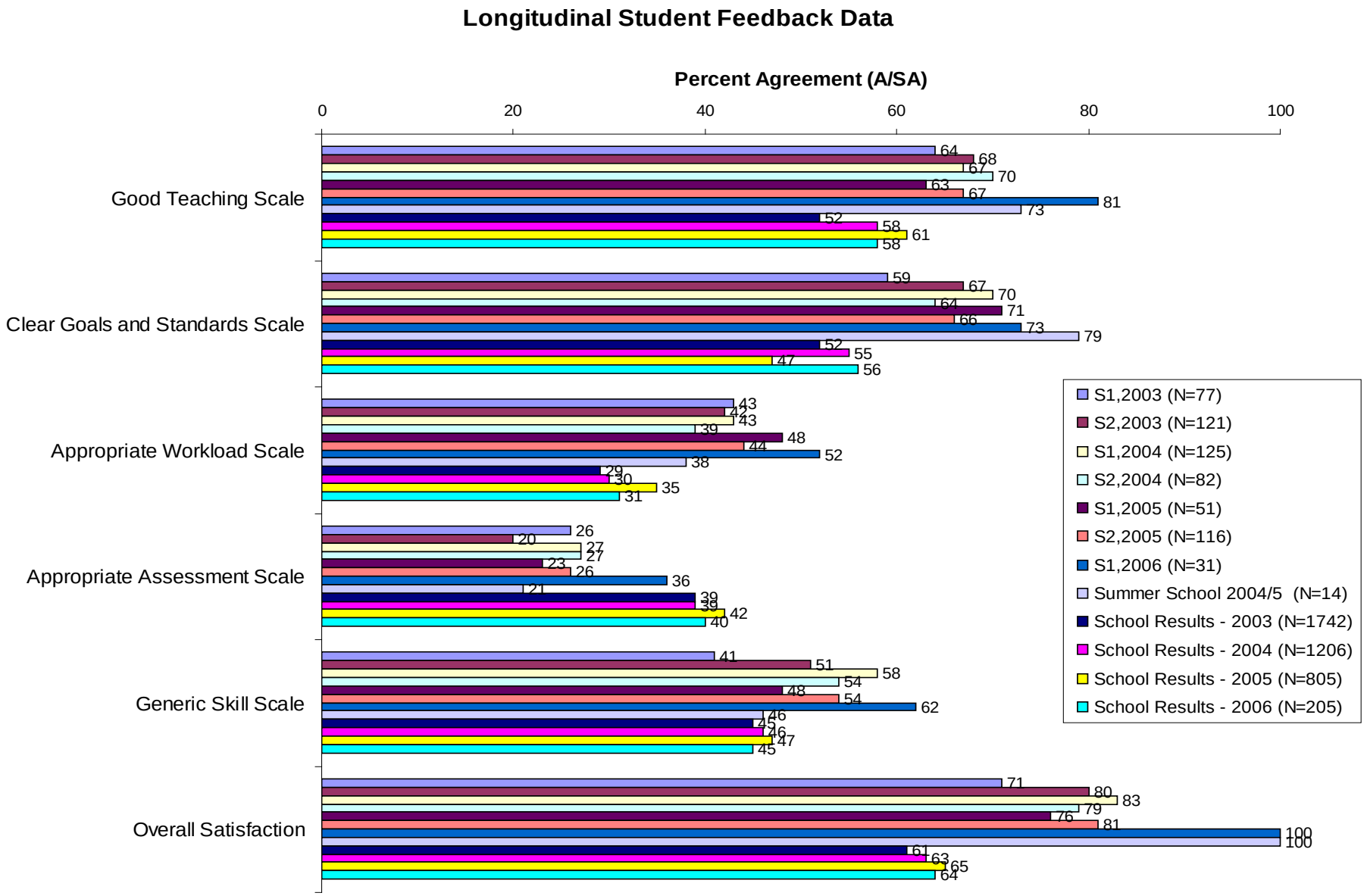

Figure 2: Longitudinal Data – Students' Perception of the Learning Experience (2003 – 2006)

The impact of the improvements in teaching practice was trackable over time. It was obvious by the general positive trend in this scale that students' approved of the efforts to enhance the teaching. Students appreciated the lecturer's sense of "humour [which] catch the student's attention", "always full of energy" and "enthusiasm about teaching". Her passion was consistently identified as influencing students' motivation … "very enthusiastic which doesn't make the lecture boring". Her explanation skills were repeatedly singled out as a key positive aspect "[she] explains in a simple way to understand terms", "uses example to help us understand computer jargon". Students readily acknowledged her discipline expertise "definitely knows the information", "[she] gives us more information that is outside the textbook that is affecting the world out there". Her efforts to make the unit more interesting and effective was clear to students … "the lecturer is very helpful and approachable; I can see that [she] has put a lot of effort in on this unit to make it interesting and understandable". Teaching techniques used were identified as key strengths "[she] breaks down the examples into very simple terms, and uses analogies to make it easier to understand, has a good sense of humour, is fair".

Students' constructive criticisms included she needed to "slow down speech", to "include more interaction [and] group discussions" and to provide "more examples" and "fewer lecture slides". A drop in agreement from ~72% down to 63% was evident in the semester 1, 2005 data. In that semester there was a problem with a sessional instructor which resulted in low satisfaction from students in that particular tutorial group. His data (50% indicated they were satisfied with the quality of the unit) contrasted sharply with the overall satisfaction with the other groups who were taught by the lecturer (78%, 92%, 80%, and 78%). This explains why the upward trend was suddenly checked in the later data sets. This finding endorsed Richardson's (2005, p.389) statement that "there is a high correlation between the ratings produced by students taking *different* course units taught by the *same* teacher, but little or no relationship between the ratings given by students taking the *same* course unit taught by *different* teachers". It also reinforces the importance of the teacher in the university classroom and illustrates how poor teaching can result in altered perceptions of the learning experience.

Clear goals and standards

The 'clear goals and standards' scale reports on students' agreement that expectations and resources were made explicit. The trend data across the years indicated a positive finding (2003 – 62%; 2004 – 67%; 2005- 75%). Similar to the teaching scale these data compared favourably against the school data (2003 – 52%; 2004- 55%; and 2005- 59%). Developing specific criteria and disseminating these to students both verbally and in explicit marking keys was acknowledged by students. Students commented that this instructor provided "clear steps and learning path", they liked the "regular Blackboard® updates. … easy to follow lecture and lab materials", "well structured unit and well structured lectures", and "[she] clearly explains what to do in lab and prepare the notes for students".

Appropriate workload

The 'appropriate workload' scale explores students' perceptions of the amount of pressure they were under to complete the required work in the unit. There are three negatively worded items in this scale. This was one of the poor performing scales in this instrument. One of the concerns with this scale and the 'appropriate assessment' scale was whether international

students who have English as a Second Language would be able to fully understand the intent of the negatively worded items. A minority agreed they had sufficient time, and not too much pressure to get through the unit (2003 – 43%; 2004- 41%; 2005- 43%; 2006 – 52%). Not surprisingly, students who took the unit in an intensive summer school period indicated they were pressured and overloaded (38% agreement) describing it as "challenging". Curiously, in semester 2, 2006 data (with the new instrument) 88% of students agreed 'the workload in this unit was appropriate to the achievement of the learning outcomes'. This later finding may lend weight to the hypothesis that some students may not have understood the negatively worded items in the initial feedback questionnaire.

Appropriate assessment

The 'appropriate assessment' scale explores students' perceptions of the level of cognitive processing required in their assessment tasks. Three of the total four items are negatively worded in this scale. This was the lowest performing scale. Again a minority indicated agreement with the items (2003-23%; 2004- 27%; 2005 – 22%; 2006 – 36%). Curiously, there were very few comments specifically expressing concerns with the workload or the assessment so it is unclear why students rated these items so poorly. In semester 2 2006, 94% of students agreed that the assessment tasks in this unit evaluated their achievement of the learning outcomes again indicating their confusion with the wording of the first questionnaire's questions.

Generic skills

The generic skills scale is comprised of five items that explore a range of generic skills that may have been developed as a result of the unit. The skills included: written communication; risk taking; the ability to work in teams; analytical and problem solving skills. Of course it is unreasonable to expect that all skills would be developed within one unit, however, the items enable academics to gauge what skills students perceived had been enhanced. These ratings generally displayed an upward trend across the semesters with 2003 – 46%; 2004 – 51%; and 2005 – 51%; 2006 – 62%). Students consistently reported that the unit developed their capacities to 'work as a team member' and their 'problem solving skills'. These individual items were frequently rated at 78-85% agreement. This feedback was valuable, as the authors had been targeting these two skills in the unit. Students identified the class activities and assessments were positively impacting on their development.

Overall satisfaction item

The overall satisfaction item displays a general positive trend over the eight teaching periods, with 2003 – 76%; 2004 – 81%, and 2005 – 79%; 2006 – 100%. It was interesting that students reported such high levels of satisfaction and yet had rated assessment and workload at low levels. This coincided with Richardson's (2005) comments that without exploring students' criteria for rating their satisfaction this one item can become meaningless, or worse, misleading. Students in this study did provide considerable open-ended data which served to qualify this item. Personal qualities of the lecturer, such as, approachableness and a caring attitude, a sense of humour and lively delivery style were identified as important. Additionally they appreciated the thorough, understandable, and relevant-to-real-life explanations provided. The application of the unit to the real world of work was also emphasised. Students indicated

they appreciated the instructors' level of commitment to consistently improve quality of the teaching and learning experiences.

Improved student outcomes
Students were required to undertake a semester long hands-on project monitored by the instructor during class. Team interactions and productivity were monitored and recorded by teaching staff and yielded data about the students' professional skill development and the efficiency of their project development. Reports from the project were used to inform the academics' research on the effectiveness of the learning and teaching approaches. The final examination contained a number of essays. The quality of student responses was tracked over the years and also informed this research.

The researchers found the quality of the final projects gradually increased over the course of the years. This was in terms of the level of cognitive demand evident in the writing. The work was found to be more innovative than in previous years. Students appeared to take more care with the final product with more editing and completion of components, possibly because of better time management. Team interactions were more constructive and productive and the incidence of student conflict (both formally reported and through observations) reduced. These findings may have been as a result of the increased transparency of assessment task criteria and academic expectations. It may also have increased because team skills were scaffolded with various resources to provide greater structure and guidance on how to interact appropriately, divide up the workload, establish timelines for intermediate project goals, and establish peer expectations and to ensure all had contact details. Students reported these materials to be unusual in their university studies and highly valuable in structuring team activities and assessments. They noted that team-based activities in other units were frequently contentious, unfair, unproductive for one or more parties, and prone to resulting in conflict, and yet this was not their experience in this unit. They indicated that they appreciated the effort that the academics had made to ensure fair and educationally sound group assessments.

Although the examination questions were changed each semester the format remained similar. The quality of students' responses in the essay sections were found to have increased over the years. This indicated that the learning experiences within the course which focussed on developing students' critical thinking skills were successful and were evident in better quality answers in the exams.

The Collaborative Action Research process – productive and constructive partnerships
The instructors were encouraged to keep a journal of their experiences and reactions related to this professional development. Regular meetings with the professional developer evolved into a trusting relationship and then to friendship. These were frequently non-formal and involved lunch or other relaxed activities. They reported that the discussions and support received through this collaborative process … "encourages me to introduce new information and adopt new teaching styles to make the lecture and lab sessions more interesting and useful to the students". The 'critical friendship' that was formed served to empower the instructors to experiment with various innovations without feeling "out on a limb" or venturing into

educationally unsound ground. One of these instructors related her reflection on the collaborative action research approach to professional development …

> *this relationship between the* [professional developer] *and me was an excellent example in my school to encourage each lecturer to involve her in their units so as to bring new techniques and approaches to the unit especially unit structure and assessments. Personally, I was delighted to work with her, as I improved and enhanced my own skills such as personal, problem solving and communication. In addition, the most important issue to involving the …* [professional developer was] *… to gain more experience and knowledge from her and to obtain new … techniques not only for me but also to share with my students as well … My task … was not only to present this information to the students, but the most important issue was to make sure that students learn the outcomes of the unit* [including the skills we are working on*] in order to carry these skills to other units in their study.*

There were other positive outcomes described by the academics in their reflections about this action research collaborative relationship. These included:

- Greater satisfaction with teaching – there is always an element of risk when changing usual teaching practices. Even so, when it is evident that the changes are having a positive impact on students learning and on their satisfaction it creates a feeling of accomplishment and pride to the academic, particularly when they are not formally trained teachers.
- Increased reassurance that assessments and learning experiences are more effective – academics dread student complaints. It was reassuring to have fewer student complaints and conversely, more appreciative comments about the increased transparency in assessment tasks.
- Reduced teacher isolation – collegial professional development relationships reduced the level of isolation that instructors may feel. The sense of companionship and even fun was refreshing and promoted the sustainability of this process.
- Greater promotional opportunities – in this university 'good teaching' is a significant criterion for promotion. This reinforced the importance of engaging in improvements to teaching.
- Increased recognition and status within the faculty – it was positive experience to be regarded as exemplars in the faculty in relation to teaching and learning as a result of their high student ratings.
- Greater job security - because of good teaching outcomes and high students satisfaction levels it enabled one of the academics, who was a sessional instructor to attain increased job security as a result of her fine student ratings.

For the professional developer, this collaboration was just as rewarding. Teaching and learning professional development within universities tends to be centralised and disconnected from the discipline. It is frequently perceived as de-contextualised, irrelevant and with the format of 'one-size-fits-all'. This was not the case in this research. The professional developer reported …

> *It was such an effective process as I belonged to the division of business and worked alongside my colleagues to assist them to make sense of all these data. I*

> *was there whenever they needed me to encourage them when the feedback was less positive, to support and guide them in their reflection and problem solving processes, and to demonstrate, structure and assist in the development of new strategies, assessment tasks and materials - it was wonderful to see the increases in student outcomes and satisfaction with their learning experiences, as well as the development of teaching skill by [the two instructors]*.
>
> *It has enabled us (as academic colleagues) to work together more effectively to support good teaching practices and to develop these teachers' understandings about teaching, learning and assessment …. It is rare for a professional developer to be able to work so consistently and over such an extended period of time with a team of people who are doing such innovative things. Then to be able to document the results both in terms of student learning, and the learning of the teachers and for myself as a professional developer – a wonderful, productive and constructive, relationship and a great learning opportunity – very satisfying and a lot of fun too!*

There was enjoyment in the intellectual stimulation resulting from shared discussions and problem solving. As a result of this collaborative action-research partnership, there have been significant improvements to the unit instructors' teaching practice which paid dividends in increasing their knowledge and expertise about teaching.

From the organisational perspective, there was a flow on effect to other academics within the business school from this successful relationship - encouraging others to engage with their own teaching and learning challenges. Other academics have found similar results in their own action research projects using their student feedback data. 'Closing the loop' actually does make a difference to student outcomes and satisfaction levels. It has been an informative journey for business school administrators, the professional developers, academics and students.

Discussion

Action research is an effective model for ongoing and sustained professional development that has positive outcomes for students and was empowering for the university instructors. A number of significant aspects emerged from this longitudinal study.

First, professional development must involve the building of positive and supportive relationships with instructors in order to effect positive and *sustained* change. Trust building between the parties involved is essential in order to explore teaching innovations. Changes to the instructors' attitudes, beliefs and behaviours was greatly influenced by student feedback and student outcomes which endorsed Guskey's (1986) model of teacher change. Establishing and sustaining effective professional development within university contexts is difficult. The professional development reported in this study was sustainable if instructors were encouraged to develop action research partnerships with colleagues. This finding mirrors school-based research which endorses the sustainability of learning communities where teachers are able to work together in teams to improve student outcomes (Darling-Hammond, 1998; Lieberman & Miller, 2000; Sparks & Hirsh, 1997).

Second, collaborative action research was a highly productive and constructive approach which resulted in "partners in learning" (Scott & Dixon, in press) – the instructor, students, and the professional developer. This process opened up opportunities for dialogue between teachers, professional developers and students. This finding contrasted with Johnson's (2000, p.423) assertion that "[t]he SEQ method of evaluation does not allow students and lecturers to discuss, evidence, explain, justify negotiate, or gain new insights into their own or the others' views, interests, values and assumptions". The authors found using student feedback and discussing changes ***with the next cohort***, actually acted as a positive point of initial contact with students. Even though some researchers feel that end-of-course questionnaires are a waste of time because it is lagging data, this issue was ameliorated by a brief mid semester informal questionnaire and by having a class representative who could meet with instructors. This ensured that any major issues could be immediately sorted out rather than waiting for the next semester. These processes emphasised the partnership with students in curriculum review processes, that feedback *was being used*, and served to model the desirability of continual improvement and relevancy to professional practice.

Third, students' feedback was useful in monitoring the success (from students' perspectives) of educational changes to the teaching practices endorsing Marsh's (Marsh & Roche, 1994; Marsh & Dunkin, 1992) assertions. In most cases, students do provide balanced, constructive advice. Students are able to determine good teaching and what helps them to learn. Curiously, students did not provide much information on the assessments on formal questionnaires but were articulate in informal settings. This difference in responses needs to be followed up in further research. On a methodological point, it was a further finding that the administration of in-class questionnaires yields significantly higher response rates to those administered online. Response rates were lower in online which indicate caution must be exercised in attributing to much meaning to these later responses.

A fourth aspect worth noting was the issue of students' perceptions of assessment. Considering that review processes over the past five years overtly targeted development and refinement of assessments it was strange that the results from the first questionnaire did not indicate any positive change. Did this mean students did not perceive the changes to be positive? Can we conjecture that no matter what an instructor does or how educationally sound the assessments are students will still perceive them as a negative component of any course? The steadily increasing trend from the 'clear goals and standards' and 'good teaching' scales lead us to think this is not the case. In addition, the high agreement level from the new simpler surveys assessment item which was worded in the positive rather than negative form also supports the concept that students were not jaded or overtly negative toward all assessment. After exploring the literature seeking possible explanations for this phenomenon the authors conjectured that the problem did indeed lie with the negatively worded items represented in these scales. It is probably as Weems *et al* (2003) posited that ESL students may not correctly interpret the intent of the items thereby affecting their responses. This should be investigated further, particularly as this instrument was closely modelled from the Course Experience Questionnaire (CEQ). Considering that universities' CEQ results influence their levels of government funding this finding certainly has implications for reviewing the CEQ instrument.

Conclusion

Although this was a longitudinal case study with two instructors and a professional developer, the large number of student participants (N=643), and the consistency of the results indicate there are lessons to be learned. This study can translate to other university academics and inform the literature on professional development. It is worth noting that although this was a case study the successes led to multiple cases of similar engagement by other academics both within and across the discipline.

Engaging in reflective action research is empowering to the individual and provides more opportunities for learning about teaching than working alone. *Closing the loop* between obtaining students' feedback and then **doing something positive with those data** significantly impacts on student satisfaction ratings and their learning outcomes. Students are key players in the university context and should be considered partners in learning with their instructors. Their perceptions are important and useful to improving teaching and learning. The organisational benefits of this partnership include potential increases in enrolment and retention, increased institutional reputation for quality teaching and learning, and recognition for a faculty which fosters good practice. The action research process is not easy but is also not onerous. It does not consume excessive amounts of time. It ensures refinements are informed by educational literature, provides a supportive environment for experimentation, and has the potential to introduce a 'fun' element for those involved – thereby creating positive collegial relationships.

Similar to many western countries, Australian higher education is a significant service export industry with increasing numbers of full-fee paying international students. Therefore, it is not surprising that there have been calls to increase the quality of higher education and to produce better graduates. Action research professional development has value in meeting the demands of the organisation in addressing calls for increasing the 'quality' of teaching and learning. As more academics engage with this type of process, the learning experiences of students will improve and academics' understandings of best practice will similarly be enhanced. It would be prudent of the federal government, therefore, to overtly recognise this type of research in their academic reward systems.

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Appendix 1. Summative Evaluation Instrument (end of unit feedback)

The Unit Experience Questionnaire Scales

Good Teaching	The staff member motivated me to do my best work
	The staff member put a lot of time into commenting on my work
	The staff member made a real effort to understand difficulties I might be having with my work
	The staff member normally gave me feedback on how I was going
	The staff member was extremely good at explaining things
	The staff member worked hard to make this unit interesting
Clear Goals and Standards	It was always easy to know the standard of work expected
	I usually had a clear idea of where I was going and what was expected of me in this unit
	It was often hard to discover what was expected of me in this unit
	The staff member made it clear right from the start what was expected of students
	The content of this unit clearly related to the unit outline
	The topics in this unit were presented in a logical sequence
	The unit materials provided were relevant and concise
Appropriate Assessment	To do well in this unit all you needed was a good memory
	The staff member seemed more interested in testing what I had memorized rather than what I had understood
	Too many questions asked were just about facts
	The assessment methods employed in this unit required an in-depth understanding of the unit content
Appropriate Workload	The workload was too heavy
	I was generally given enough time to understand the things I had to learn
	There was a lot of pressure on me as a student in this unit
	The sheer volume of work to be got through in this unit meant that it could not all be thoroughly comprehended
Generic Skills	The unit developed my problem-solving skills
	The unit sharpened my analytical skills
	The unit helped me to develop my ability to work as a team member
	As a result of this unit I feel confident about tackling unfamiliar problems
	The unit improved my skills in written communication
Overall Satisfaction	Overall, I was satisfied with the quality of this unit