

## ACTION RESEARCH AND UNIT IMPROVEMENT IN HIGHER EDUCATION; A CASE STUDY APPROACH

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### ABSTRACT

*Student satisfaction data has been collected on a national basis in Australia since 1972. In recent years this data has been used by federal government agencies to allocate funding, and by students in selecting their universities of choice. The purpose of this paper is to present the findings of an action research project designed to identify and implement unit improvement initiatives over a three year period for an underperforming unit. This research utilises student survey data and teacher reflections to identify areas of unit improvement, with a view to aligning learning experiences, teaching and assessment to learning outcomes and improved student satisfaction. This research concludes that whilst a voluntary student survey system may be imperfect, it nevertheless provides important data that can be utilised to the benefit of the unit, learning outcomes and student satisfaction ratings, as well as wider course related outcomes. Extrapolation of these findings is recommended to other underperforming units.*

Keywords: Action research, unit improvement, student surveys, student satisfaction

### INTRODUCTION

There is increasing competition between Australian universities to attract and retain students. This is particularly relevant in the post global financial crisis environment, with international student numbers plummeting and there being a “flight to quality” of the remaining student cohort. Student satisfaction data has been collected on a national basis in Australia since 1972. In recent years this data has been used by federal government agencies to allocate funding, and by students in selecting their universities of choice (Towers et al., 2010). Student satisfaction data is also collected by all Australian universities as a measure of student perception of unit and teaching quality. This university specific data provides student feedback on each unit and its teachers, informs quality assurance processes (Alderman et al., 2012) and enables underperforming units to be identified. This paper outlines the process by which an underperforming unit at Queensland University of Technology (“QUT”) improved its student satisfaction ratings over a three year period using student survey data and teacher reflections, together with action research principles.

### BACKGROUND

QUT utilises student satisfaction surveys as one measure to determine the teaching and unit quality of each unit<sup>2</sup>. These Learning Experience Surveys (LEX) are a voluntary process through which students provide anonymous feedback on their units and teachers each semester. LEX is conducted in the final teaching weeks of a semester in an online format. LEX seeks separate student feedback on both the *Unit* itself and the *Teaching* quality.

For the *Unit* (each subject), students are asked to rank on a scale on 1 (Rarely) to 5 (Always) the following statements:

- U01 - The unit activities helped me develop useful skills and knowledge.
- U02 - The relevance of the unit activities was clear.
- U03 - The structure and organisation of the unit assisted my learning.
- U04 - I received helpful feedback on my learning.
- U05 - I have been satisfied with the overall quality of this unit.

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<sup>2</sup> QUT is phasing out LEX during 2012, replacing it with an alternate student evaluation system.

Students are then asked to indicate if they are Satisfied or Not Satisfied in relation to assessment (workload, level of difficulty and relevance to topic), lectures, tutorials, practicals/labs/studios, unit materials, unit websites, unit online activities and textbook.

*Teaching* quality is rated in a similar manner with students ranking the following questions on a scale of 1 (Rarely) to 5 (Always):

- T01 - This teacher demonstrated expertise in the unit topics.
- T02 - This teacher taught in a clear and helpful way .
- T03 - This teacher showed a positive attitude to helping me learn.
- T04 - I have been satisfied with the overall teaching of this staff member

Students may choose Not applicable/No Comment for any of responses sought above. Students are also prompted to provide open response comments on:

- What were the best aspects of this unit and why? (Unit)
- What aspects of this unit are most in need of improvement and why? (Unit)
- Please comment on this staff member's teaching. (Teaching)

Quantitative results are released to teaching staff during the examinations period, however qualitative comments are not released to staff until after student results have been finalised. Any unit or teacher with a U05/T04 in QUT's bottom quartile is identified as underperforming in the university's course quality reporting (Queensland University of Technology (QUT), 2009, 2010, 2011, 2012b). Within faculty administration and the staff performance review process, any ratings below the QUT and/or faculty average are considered as underperforming and potentially "at risk".

The unit which is the subject of this action research project was an underperforming third year finance unit within QUT's Urban Development degree. It is a core unit for Property Economics students and a unit in the Property Economics minor/major stream. It is the third unit in a sequence of three nested units that build the students' knowledge in property investment principles. Annual enrolment is approximately 70-90 students. This unit had evolved over a number of years without any critical examination of its structure, sequencing, assessment methods or even alignment with defined outcomes. Student surveys had indicated dissatisfaction with the unit, with the unit rating well below both the university and faculty averages, culminating in a trough in 2009. Student comments on the unit content were acceptable, however those on the assessment and teaching were damning.

The use of student survey data in assessing the quality of both the student's learning experience as well as teacher performance is a somewhat contentious subject. Proponents of this method claim student surveys provide reliable and stable data that is relatively unaffected by a variety of variables hypothesized as potential biases whilst also being useful to faculties as feedback about their teaching staff (Perry and Smart, 2007). On the other hand, detractors question the validity and value of student feedback (Alderman et al, 2012), claiming it is fragile and susceptible to a multitude of influence (Darwin, 2012). Lecturers often claim student comments are overly personal and driven by self interest. A survey by Arthur (2009) concluded that lecturer responses generally consist of four possible reactions: "shame, blame, tame (the students) and reframe (the negative as something positive)" (Arthur, 2009, p441). These negative perceptions by lecturers are amplified when student survey data is used in the staff performance review process. Of course there is also the issue that Academics are assumed to respond professionally to student feedback, making appropriate improvements to their teaching (Arthur, 2009).

The purpose of this paper is to provide the *Reflection* component of this action research project (Kemmis and McTaggart, 1988), documenting the action research process by which the quality of an underperforming third year finance unit within QUT's Urban Development degree was improved over a three year period 2009 - 2011. Note this unit is only offered in Semester 1. This research utilises LEX (student survey) data and teacher observations to identify areas of unit improvement, with a view to implementing change aimed at improved student satisfaction and unit quality (Queensland University of Technology (QUT), 2012a).

This paper is arranged in the following sequence: this initial section has presented the background to the research problem and the student survey process LEX. The second section outlines the action research methodology and details the outcomes of Plan, Act, Observe and Reflect as they apply to this research project through two cycles of action research. The final section concludes and provides recommendations for the future cycle.

## METHODOLOGY

This section outlines the usual action research methodology of plan, act, observe and reflect. These principles have been utilised over a period of two cycles to identify issues, plan and then implement change, monitor results, refine the actions taken and then reflect on the impacts against the initial objectives (Kemmis and McTaggart, 1988). This paper forms the “Reflect” phase of this research after completion of the second cycle at the end of 2011.

The data for this research is drawn from the LEX survey results from the enrolled students 2009 – 2011 as well the observations of the teaching team. QUT’s Individual Course Reports 2010 – 2012 are used to track the performance of this unit in comparison to university quality standards<sup>3</sup>. The data and discussion in this paper is presented in an order which is consistent with the LEX survey sequencing and QUT Course Quality Reports, separating feedback on the *Unit* from feedback on the *Teaching*. These are italicised to emphasise the difference between these two aspects of the student evaluation.

## CYCLE ONE

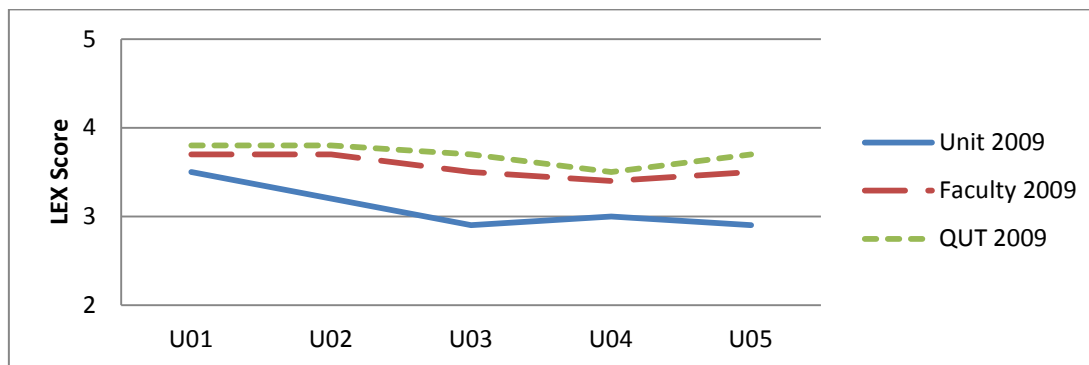
This section firstly presents the data from the student surveys through the “Plan” phase. The proposed actions are then detailed under “Act”, and the end findings are documented in “Observe”. Note that teacher reflections did not form part of this first cycle of action research.

### Plan

This unit had been identified as underperforming in both the quantitative 2009 LEX results and 2010 QUT Course Report for 2009 and 2010. Key findings from analysis of the 2009 LEX results for this unit are indicated below. *Unit* and *Teaching* are evaluated separately in accordance with LEX methodology:

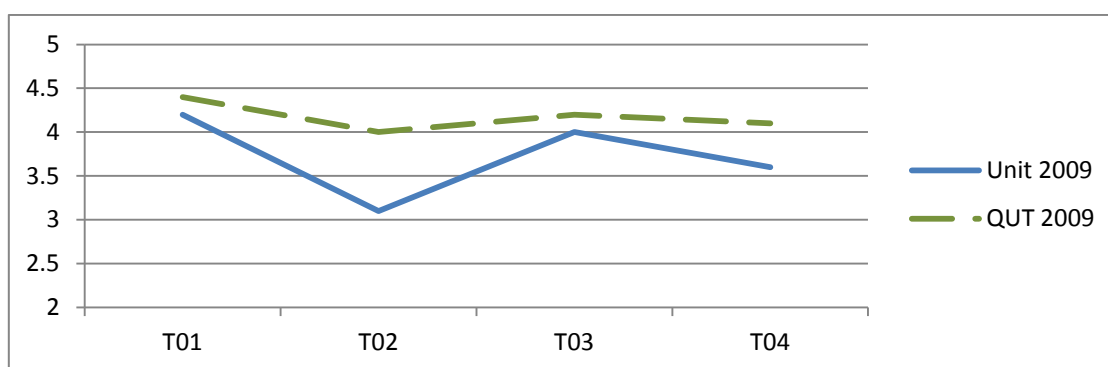
- Of the 84 students enrolled in this unit, 21 completed the LEX survey. This is a unit response rate of 25%.
- As illustrated in Figures 1 and 2 below, LEX results for both the Unit and Teaching were well below the Faculty and QUT averages in 2009. The results for this unit are indicated by the solid line. Faculty and University averages are indicated by the dotted and dashed lines respectively as indicated.
- The 2010 QUT Course Report indicated that the scores for U03, U04 and U05 were in the lowest 25% percentile for the University which indicated a unit “at risk”.

Figure 1: 2009 LEX Student *Unit* Ratings



<sup>3</sup> Full details of QUTs Course Quality Assurance processes are provided by Towers et al (2010).

**Figure 2: 2009 LEX Student Teacher Ratings**



Note: Faculty Teacher data was unavailable for 2009

Table 1 indicates that the majority of students (>50%) were satisfied with the Assessment, Unit Materials and Website. However the majority of students (>50%) were not satisfied with the Lecture presentation. Students were split on whether they were satisfied or not satisfied with the Tutorials.

**Table 1: 2009 LEX Student Unit Satisfaction Items**

	% Satisfied	% Not Satisfied	% Not Applicable
(USAT01) Assessment - Workload	71.4%	23.8%	4.8%
(USAT02) Assessment - Level of Difficulty	66.7%	28.6%	4.8%
(USAT03) Assessment - Relevance to Topic	76.2%	19%	4.8%
(USAT04) Lecture - Presentation	42.9%	57.1%	0%
(USAT05) Tutorials	47.6%	47.6%	4.8%
(USAT06) Practicals/Labs/Studio	38.1%	38.1%	23.8%
(USAT07) Unit Materials	61.9%	19%	19%
(USAT08) Unit Website	81%	4.8%	14.3%
(USAT09) Unit Online Activities	28.6%	14.3%	57.1%
(USAT10) Textbook	19%	23.8%	57.1%

The initial Plan phase also examined the qualitative comments provided by students. These qualitative comments provide additional depth to the raw quantitative data captured above. In order to identify key student concerns, the student comments collected were categorised by:

- *Unit:* Learning outcomes, Assessment, Teaching or Other
- *Teacher:* Positive, Negative or Neutral

As can be seen in Table 1 below, students overwhelmingly rated the Learning Outcomes as the most positive aspect of the unit, with the Teaching being in most need of improvement (88%) followed by Assessment (44%). It is interesting that negative comments relating to Assessment features much more prominently than in the quantitative unit satisfaction rankings above which are relatively favourable to the Assessment. The level of detail and consistency in the comments provided warrants further attention to Assessment.

**Table 2: 2009 LEX Student *Unit* Comments - Categorised**

Question	Response rate (84)	Learning Outcomes	Assessment	Teaching	Other
What were the best aspects of this unit and why?*	17% (13)	77%	23%	8%	0%
What aspects of this unit are most in need of improvement and why? *	19% (16)	13%	44%	88%	6%

\*Findings total more than 100% due to multiple responses from some students

Table 2 provides further information on the teacher quality, identifying one teacher to be highly rated by students, and the other not. This provides further insight into the low quantitative scores indicated in Figure 2.

**Table 3: 2009 LEX Student *Teacher* Comments - Categorised**

Question	Response rate (84)	Teacher	Positive	Negative	Neutral*
Please comment on this staff member's teaching	17% (13)	1	22%	64%	14%
Please comment on this staff member's teaching	19% (16)	2	90%	10%	0%

\*Neutral comments were those that gave both positive and negative feedback, or were neither positive nor negative.

In summary, this initial Plan phase identified Teaching and Assessment to be potential areas for improvement, with the unit Learning Outcomes being a positive aspect that should be retained and/or improved upon.

## Act

The Act phase of this research commenced at the beginning of Semester 1, 2010. The actions observed by the author further to assessment of this data include the following:

- In 2010, as per 2009, Teacher 1 was the unit co-ordinator. This teacher was responsible for setting the lecture content, tutorial activities, assessment items and recommended readings as well as administering the unit Black Board site. In 2010, Teacher 1 delivered 50% of the lectures and attended 50% of the tutorials (instead of 100% of both as in 2009). This freed Teacher 1 up to spend more time responding to student queries and concerns.
- Teacher 2, who was a sessional staff member, was replaced by a new permanent academic with expertise in this subject area. Teacher 2 had obtained very positive LEX scores, however the specific experience of the new academic in this subject area was deemed to outweigh any potential negative consequences of removing high performing sessional staff. Budgetary impacts and workload allocations were also a consideration. To avoid confusion, this new Teacher will be referred to as Teacher 3 for the remainder of this paper.

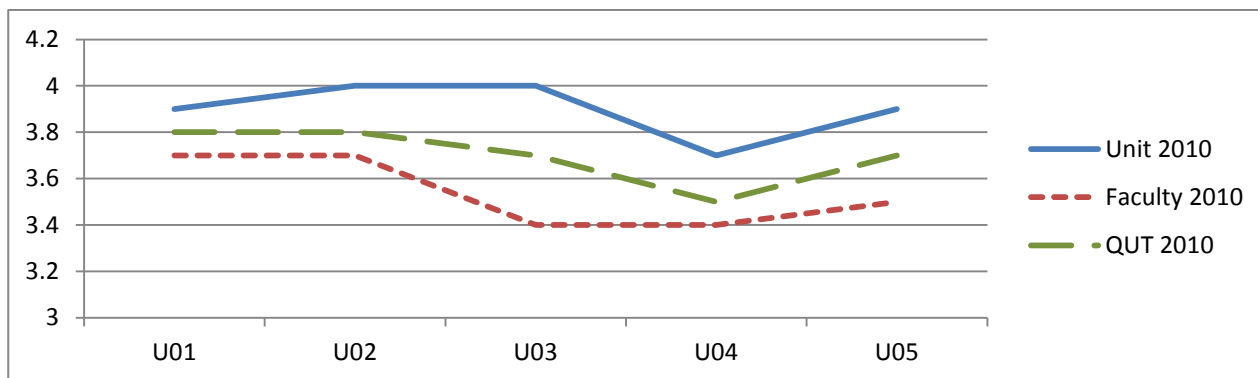
In 2010, Teacher 3 was responsible for delivery of 50% of the lectures, and participated in 100% of the tutorials. Teacher 3 re-worked the 50% lecture content delivered, focusing on simplifying complex concepts and introducing more “real world” examples to enhance student understanding of the key learning outcomes.

## Observe

The 2010 LEX results acted as both the Observe phase as well as the basis for the Plan phase for the subsequent cycle. As can be seen in the figures below, significantly positive results were achieved in this first cycle. Of the 83 enrolled students in 2010, 26 responded, which reflects a 31% unit response rate.

Figure 1 demonstrates how the *Unit* rating went from being below the Faculty and QUT average, to above both averages. The 2010 QUT and Faculty averages were largely consistent with those for 2009. This unit leapt from below 3 (Often) to just below 4 (Very Often) for the primary indicator U05 (“I have been satisfied with the overall quality of this unit”).

**Figure 3: 2010 LEX Student Unit Ratings**



As evidenced in Figure 4, the *Teacher* rating also improved significantly, averaging in-line with the QUT average, which was above the Faculty average.

**Figure 4: 2010 LEX Student Teacher Ratings**

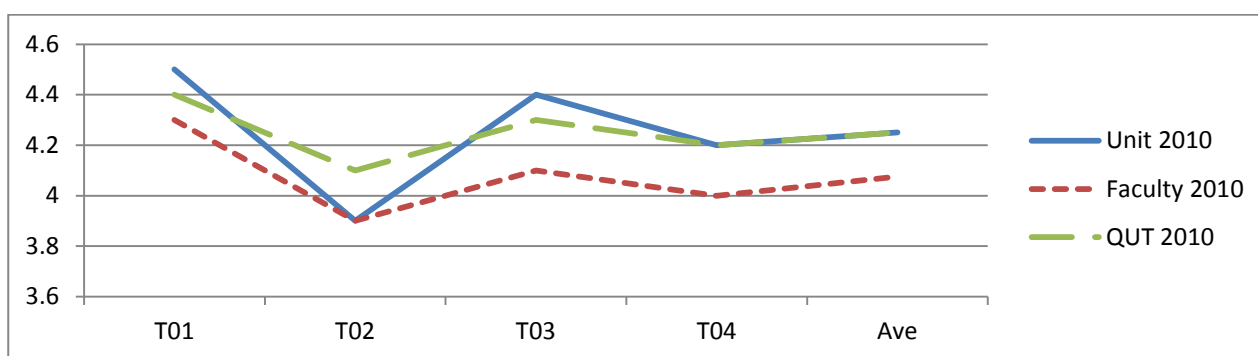


Table 4 indicates a significant improvement in a number of the key unit satisfaction criteria. If the three items with a high Not Applicable rating are excluded (Practicals/Labs/Studio, Unit Online Activities and Textbook<sup>4</sup>) all criteria showed the vast majority of students were very satisfied (>73%).

**Table 4: 2009 LEX Student Unit Satisfaction Items**

	% Satisfied	% Not Satisfied	% Not Applicable
(USAT01) Assessment - Workload	96.2%	3.8%	0%
(USAT02) Assessment - Level of Difficulty	88.5%	7.7%	3.8%
(USAT03) Assessment - Relevance to Topic	92.3%	3.8%	3.8%
(USAT04) Lecture - Presentation	76.9%	23.1%	0%
(USAT05) Tutorials	73.1%	23.1%	3.8%
(USAT06) Practicals/Labs/Studio	50%	19.2%	30.8%
(USAT07) Unit Materials	88.5%	7.7%	3.8%
(USAT08) Unit Website	88.5%	7.7%	3.8%
(USAT09) Unit Online Activities	46.2%	7.7%	46.2%
(USAT10) Textbook	26.9%	11.5%	61.5%

<sup>4</sup> Practicals/Labs/Studio are deemed to be the same as the Tutorial in this instance. There were no specific Unit Online Activities set and no recommended Textbook.

Turning to the qualitative comments, and applying a similar categorisation process as per the Plan phase, Tables 5 and 6 indicate the results. Students enjoyed the Learning Outcomes of the unit, however Teaching is still an issue. The tutorials featured heavily in the comments, from both the positive and negative perspectives. This could be interpreted as students placing a high reliance on this delivery mode as a valued learning avenue.

**Table 5: 2010 LEX Student Unit Comments - Categorised**

Question	Response rate (83)	Learning Outcomes	Assessment	Teaching	Other**
What were the best aspects of this unit and why?*	17 (20%)	65%	6%	24%	24%
What aspects of this unit are most in need of improvement and why? *	17 (20)%	24%	12%	65%	29%

\*Findings total more than 100% due to multiple responses from some students

\*\*Vast majority of these comments related to tutorials

Table 6 provides further information on the teacher quality, identifying one teacher to be very highly rated by students, whilst the other is not.

**Table 6: 2009 LEX Student Teacher Comments - Categorised**

Question	Response rate (83)	Teacher	Positive	Negative	Neutral*
Please comment on this staff member's teaching	17 (20%)	1	33%	39%	28%
Please comment on this staff member's teaching	17 (20%)	3	100%	0%	0%

\*Neutral comments were those that gave both positive and negative feedback, or were neither positive nor negative.

Again, the qualitative comments provide a slightly different perspective from those of the quantitative outputs. From the comments, it can be seen that the teaching is still a concern for 65% of the respondents, be it in the class room or the tutorial rooms. This is in contrast to the 76.9% satisfaction with lecture presentation in the quantitative results. The level of detail and consistency in the comments provided warrants further attention to Teaching. It can be further observed that the introduction of Teacher 2 has had a positive impact on this unit, with 100% of the student comments being positive about this Teacher.

## Reflect

The introduction of a fresh teacher with specific skills in this subject area has had impressive results in just one year. Analysis of the quantitative results only may lead to one to think that the problem had been “fixed” or that the low results of the prior year were invalid. However upon analysis of the written comments, it can be seen that there are still concerns with student feedback of Teacher 1 and there is always room for improvement on other items such as tutorials and assessment.

## CYCLE TWO

Cycle Two of this action research project commenced with the delivery of the unit the following year in Semester 1, 2011.

## Plan

As mentioned above, the Observe phase of Cycle 1 provided the basis for this Plan phase for Cycle 2. Impressive improvements were achieved in virtually all student satisfaction criteria. However, as advocated by QUT student satisfaction is only one of a number of criteria that should be taken into account in the unit improvement process (Queensland University of Technology (QUT), 2012a). Teacher observations from Teacher 3 also form part of the data for this second phase.

Teacher 3 documented reflections on the learning outcomes, teaching, learning experiences and assessment for this unit in 2010 for use in this research. A number of areas of further improvement were identified, these included:

- inconsistency in stated learning outcomes against delivered content,
- quality of teaching materials supplied,
- simplification of student reference material,
- restructure of the assessment nature to ensure individual student effort is assessed
- consistency in marking, and
- alignment of assessment tasks with learning outcomes.

## Act

A number of changes were enacted to the unit delivery for 2011 as detailed below. These actions were aimed at addressing specific issues in the qualitative student comments and teacher observations.

**Assessment:** The existing structure of 1 x individual assignment (30%), 1 x group assignment (39%) and 1 x final exam (40%) was retained. However, a number of changes were introduced for these assessment items in 2011:

- **Weighting:** Assessment 1 = 15%, Assessment 2 = 35%, Final Exam = 50%. This weighting was designed to ensure students remain engaged throughout the semester. The relatively low weighting of Assessment 1 ensures students who may be struggling with basic concepts early on, are not overly penalised. Extensive feedback was provided between the two assessment items to ensure students are provided with the opportunity to progressively improve their work. Under the previous assessment weighting, together with the highly collaborative nature of the assessment items, 60% of the assessment could not be attributable to individual student work. Marking of assignments was inconsistent and appeared overly generous with a high proportion of students receiving high marks (percentage in excess of 80%: 40% for Assignment 1 and 55% for Assignment 2). A high number of students failed the final exam (56%), whilst only 4% failed the unit overall. 31% of students had already attained a grade of 4 prior to the final exam.
- **Assessment description:** It was proposed to significantly change both assessment tasks. These changes were designed to progressively develop student understanding of the topic and to ensure individual work is assessed in Assessment 1 and group skills are developed in Assessment 2. Both assignments were still analytical reports, requiring students to carry out research and demonstrate their ability to apply their knowledge in real world scenarios
- **Marking:** Marking sheets were prepared and distributed for all markers. Moderation also occurred to ensure a level of consistency was achieved. Previously, no marking criteria or template was provided to markers resulting in widely varying marks for similar work.

**Unit content:** The unit outline was amended to better reflect the desired learning outcomes associated with this unit. The more complex and advanced topics were covered in less detail, with further emphasis early in the semester on basic principles to ensure students fully understand the basic concepts prior to progression to intermediate material and the introduction of advanced calculations.

**Quality of teaching material:** In 2010, a single required text was nominated (up to 20 recommended texts had been nominated in 2009/2010). The nominated text was of Australian content, published in 2009 which made it highly relevant to this dynamic topic. Lecture material was drawn heavily from this text, with chapter references provided to students for additional reading. This book also became the nominated text book for one of the pre-requisite unit taught in the preceding semester. Nominating a required text has the additional benefit of ensuring the Library purchases multiple copies of the book. Negotiations with the Library resulted in five copies being ordered, with one copy to remain on course reserve. A second recommended text was nominated, which was also the nominated textbook for at least two other prior units. Other reading material was posted on Blackboard as it became relevant to the weekly lectures. Lecture notes were also fully revised to remove existing errors.

**Tutorials:** Student comments indicated strongly that the computer lab tutorials greatly assisted in understanding the theoretical concepts delivered in lectures. It was proposed to use some of the computer based model from prior years with minor amendments only. Valuable learning opportunities did exist with those exercises, however the method of delivery was amended, and it did not form part of Assessment 1. New material was developed for the early tutorials to complement the Weeks 1-4 lecture material.

**Teaching:** Teacher 3 became unit co-ordinator in 2011. This teacher was responsible for setting the lecture content, tutorial activities, assessment items and recommended readings as well as administering the unit Black Board site. Significant re-working of the lecture material was carried out, re-aligning the lecture material with the stated learning outcomes. In 2011, Teacher 3 delivered 100% of the lectures. A new tutor (to be referred to as Teacher 4) delivered 100% of the tutorials largely in accordance with the 2010 material.



## Observe

The 2011 LEX results form the basis of the Observe phase of Cycle 2 and are documented herein. Where applicable, trend data is presented in this section to demonstrate the aggregate improvement of this unit over the two cycles of action research.

Figure 5 demonstrates the improvement in student response rate over the study period. In 2011, of the 62 enrolled students, 29 responded to LEX. This gave a 47 unit response rate, a significant increase from previous years. This can be interpreted as greater engagement of the student body in the feedback process and provides weight to the proposition that the responses are representative of the total student cohort. .

**Figure 5: 2009-2011 LEX Student Response Rate**

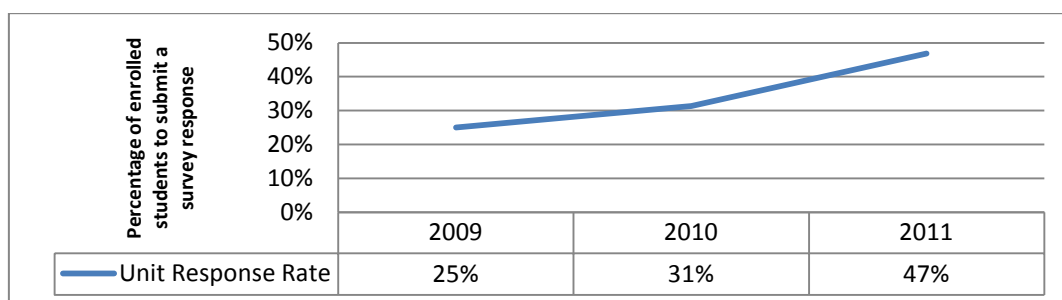


Figure 6 demonstrates the improvement in the *Unit* rating over the study period. In the three years since the inception of this research project, student satisfaction ratings for this unit have increased from 0.7 points below the Faculty average to 0.7 points above the Faculty average. Whilst the Faculty and QUT averages have remained steady over this time, the vast improvement of student satisfaction in this unit (solid line) can readily be identified.

**Figure 6: 2009-2011 LEX Student *Unit* Rating**

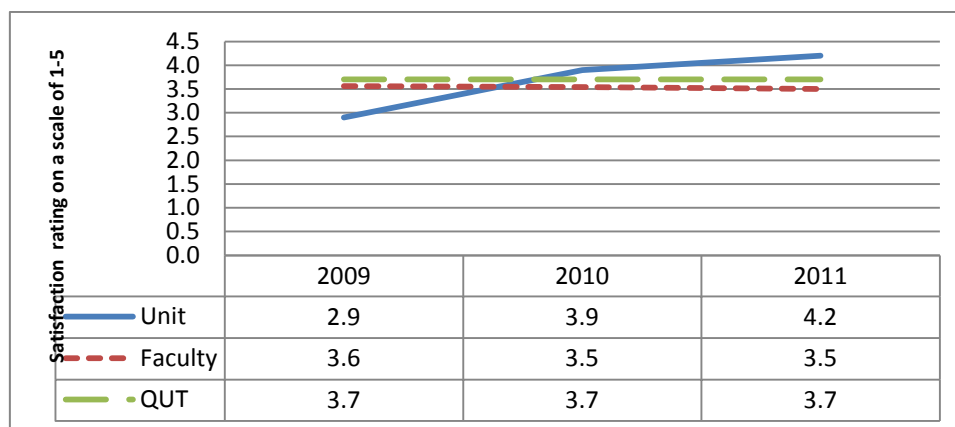
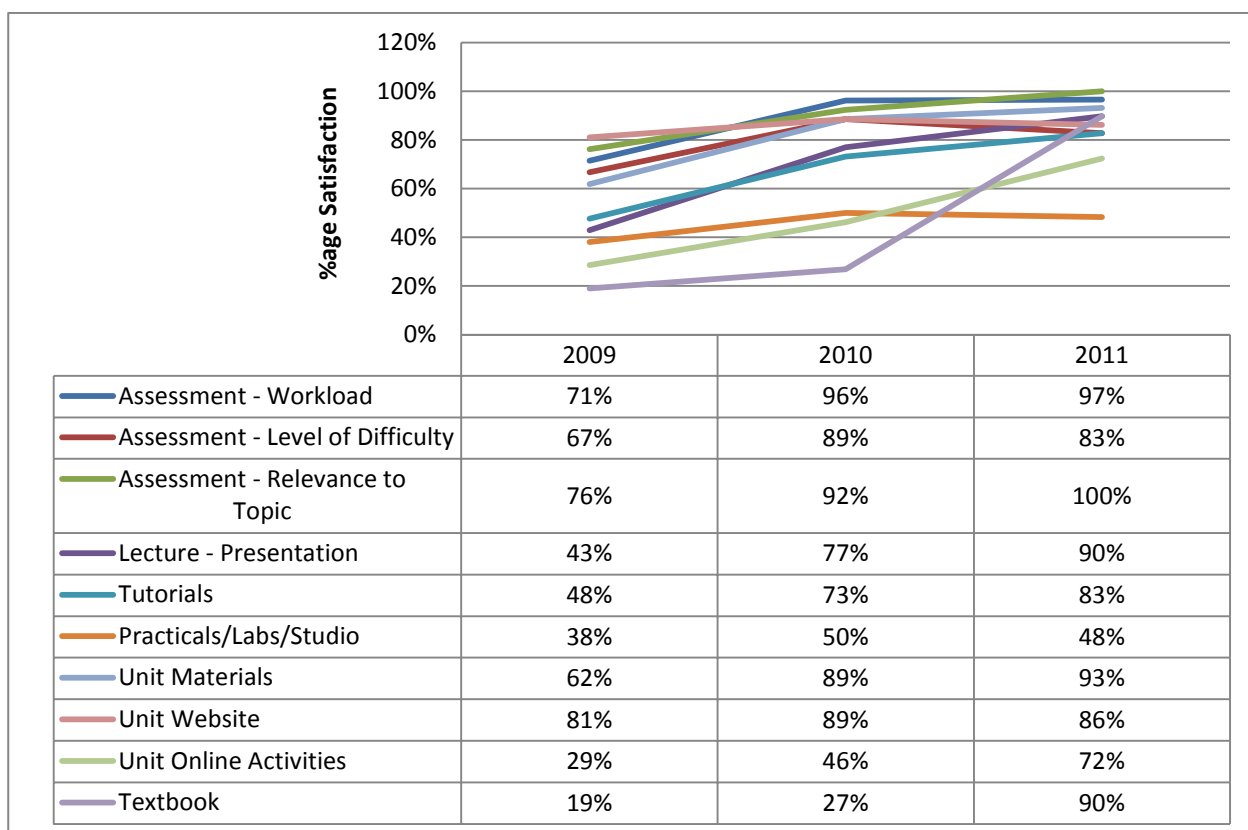


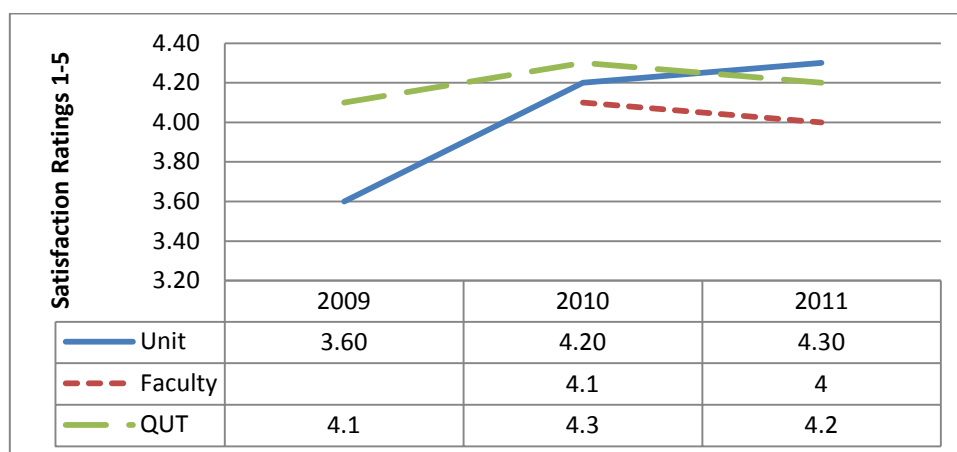
Figure 7 demonstrates the upwards trend of virtually all student satisfaction criteria over the course of this research project. If we remember that there are no Practicals/Labs/Studios for this unit, only tutorials, then these outcomes are truly favourable.

**Figure 7: 2009-2011 LEX Student Satisfaction Unit Rating**



Moving to the *Teacher* quality data demonstrated in Figure 8, similarly positive trends are evident. Not only is this unit now outperforming both the Faculty and QUT, it is on a positive trajectory, whilst the Faculty and QUT average teaching performance has diminished in 2011.

**Figure 8: 2009-2011 LEX Student Teacher Rating**



\* Faculty teaching data not available for 2009

Turning again to the qualitative comments, and applying a similar categorisation process as per the Plan phase, Tables 7 and 8 indicate the results. Students enjoyed the Learning Outcomes of the unit, with comments relating to Assessment the greatest opportunity for improvement. These comments related to assessment weighting and better feedback, items which can be addressed in future cycles. Interestingly, 27% of the students provided comments on what they liked best about the unit, whilst only 19% responded to “areas of improvement”. When the four “nil” responses are excluded, this brings the number of student comments on what can be improved in the unit from a total of 47% of responders down to only 13% (8) wishing to submit items for improvement.

**Table 7: 2010 LEX Student Unit Comments - Categorised**

Question	Response rate	Learning Outcomes	Assessment	Teaching	Other**
What were the best aspects of this unit and why?*	17 (27%)	65%	24%	29%	0%
What aspects of this unit are most in need of improvement and why? *	12 (19)%	0%	42%	17%	33%

\*Findings total more than 100% due to multiple responses from some students

\*\*The 4 “other” responses all replied “nil improvement”

Table 8 provides further information on the *Teacher* quality, identifying both teachers to be very highly rated by students. These qualitative findings are consistent with the quantitative indicated in Figure 8.

**Table 8: 2009 LEX Student Teacher Comments - Categorised**

Question	Response rate	Teacher	Positive	Negative	Neutral*
Please comment on this staff member's teaching	15 (23%)	3	100%	0%	0%
Please comment on this staff member's teaching	9(14%)	4	78%	11%	11%

\*Neutral comments were those that gave both positive and negative feedback, or were neither positive nor negative.

QUT’s Individual Course Report outcomes are equally positive in relation to the turnaround of this unit. For 2011, the unit outperformed on all LEX criteria and was in the neutral range for USATs (2011 ICR, 2011).

## Reflect

As stated previously, this paper forms the “Reflect” phase of this research after completion of the second cycle at the end of 2011.

After the first cycle, student satisfaction as rated by LEX, showed a positive trend since 2009. This suggests that there were many elements of the unit the students found positive. On the face of this data, it could be interpreted at “all is now well” so nothing needed to be changed, with the exception of Teacher 1’s consistent poor ratings. However, the written comments in comparison provided more insights about the students’ views and thoughts on the unit. On the positives, most of the comments showed that the students enjoyed the subject matter, the content and the practical application of this unit onto their career paths. On the negatives, there were signs the students were struggling with the details of the content taught. In particular anything related to calculations of financial problem questions. So further room for improvement was clear – either review the unit content to devote time and resources to teaching methods in calculations or revise the unit content to better align with the stated unit objectives and provide greater emphasis on conceptual instead of detailed applications.

After the second cycle, the positive trend in LEX continued. All metrics showed further improvement as the unit structure changes were implemented. The written comments were largely consistent with the LEX outputs, supporting rather than contradicting these data. Any negative comments were largely limited to the weighting of assessment, an item that can be addressed in further cycles. As a teacher observation, a disconnect between tutorials and lectures was observed. Tutorial attendance was very poor in the second cycle. This was inconsistent with earlier findings that students valued the smaller computer based tutorials as a valued learning environment. This may be due to the fact that tutorial activities did not form part of Assignment 1, and that all tutorial activities were available online. For future cycles, Teacher 3 will participate in tutorials as well as lectures to monitor the material being delivered and to identify opportunities for further learning enhancement.

It is acknowledged that there are clear limits with the LEX system. First of all, the questions in the survey are broad, second, it does not reveal what are the problems if any the students find about the unit, and third perception based surveys like LEX could only offer perceptive rather than in depth feedback. Lastly, the university wide student survey process is a voluntary survey, thus the response rate is usually low. This suggests the data may not be robust from a methodological perspective, so the results drawn from the survey should not be treated as representative of all students’ opinion, instead it offers some anecdotal evidence of how students rate the unit.

## **CONCLUSION**

This third year property finance unit was running for a number of years with varying degrees of low student satisfaction. A cursory glance at the LEX scores could attribute this primarily to student dissatisfaction with Teacher 1. However, deeper analysis of the LEX comments, combined with Teacher 3 reflection indicated a number of additional opportunities for unit improvement. These initiatives focused on: ensuring consistency between stated learning outcomes and delivered content, high quality teaching materials supplied, simplification of student reference material, restructure of the assessment nature to ensure individual student effort is assessed as well as consistency in marking, and alignment of assessment tasks with learning outcomes.

Further cycles will monitor student learning, participation and engagement to test the efficiency and effectiveness of these unit improvement initiatives, with any further required changes implemented in future years.

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