Office of Research and Development

The Student Voice: Using Student Feedback to Inform Quality in Higher Education

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature:

Date: 28th April, 2015

Abstract

This thesis provides a scholarly synthesis of a series of original published works which develop an understanding of the role of student evaluations of teaching in improving the quality of teaching and learning in higher education. Furthermore it makes a significant contribution to knowledge in the field of evaluation of teaching and learning by incorporating a focus on student learning outcomes into evaluation processes which have more traditionally focused on student perceptions of teaching. To date, there has been no student evaluation system focussing on student learning outcomes that has been successfully implemented and studied to determine the unique insight of students' perceived achievements of learning outcomes. The research underpinning this thesis has, for the first time, provided evidence that student feedback is effective in improving the quality of teaching and learning in higher education. The data collected and analysed revealed that the key features for successful quality improvement are: 1) the collection of student feedback on learning using valid instruments; 2) a university culture of quality improvement; 3) a system that prompts students and teachers to reflect on the outcomes of teaching and learning experiences; 4) the transparent analysis and reporting of data; 5) professional development and support for teachers; and 6) closing the feedback loop for students.

The main aim of the study was to improve the quality of teaching and learning in higher education using student feedback. To this end the study explored two main research questions:

1. What are the key factors underpinning the effective use of student feedback for quality improvement of teaching and learning in higher education?
2. What do student perceptions of their teaching and learning experience reveal about the quality of their learning in higher education?

Two key aspects form the basis of this research: online student evaluation systems and the placement of the student at the centre of quality improvement of teaching and learning. The first evaluation system developed and implemented between 1999 and 2005 within a school at Curtin University, informed the practices and processes of the second university-wide system, implemented from 2005. Issues revealed by the students were investigated and used to inform teaching and learning practices and curriculum design within the school. The outcomes of the original study were taken up by the University and the focus of this study is the subsequent development and validation of university-wide evaluation surveys for units and teachers which gather students' perceptions of the quality of the teaching and learning experiences and their achievement of learning outcomes. A key component of the investigation is how student feedback is used to improve the quality of teaching and the student learning experience. The significance of this research has resulted in the unit and

teaching evaluation surveys being taken up by three other Australian universities and one higher education provider is currently investigating the feasibility of implementing the unit survey into a dual sector setting. Other universities are utilising the unique methodologies developed for analysing student comments. The unique approach developed during this study has clear pedagogical underpinnings and evidence indicates that it has influenced subsequent research by others in the field. Across 21 Australian universities there is increasing momentum in using multiple forms of evidence, including student feedback, to clarify expectations and set indicative standards for teaching through the adoption of the *Australian University Teaching Criteria and Standards Framework.*

In fulfilment of the demands of the Doctor of Philosophy by Publication offered by Curtin University, this research adopted the naturalistic inquiry paradigm and heuristic qualitative inquiry and includes ten published manuscripts related to the research questions. This approach and the initial research investigations provided the stimulus for subsequent research undertaken and reported in this thesis. The ten publications used as evidence are further supported by scholarly work referred to, but not included as part of this thesis and includes four supplementary journal publications, five full conference publications and 26 conference presentations. Five survey instruments, including original conceptions were developed and used to investigate students' perceptions of the effectiveness of teaching and learning experiences on their learning outcomes. The ten publications, linear in their conceptual development, used mixed methods to verify the research findings.

The research outputs from this thesis are structured into three main themes:
- Theme 1) Survey development, validation and practice (papers one to three);
- Theme 2) Student evaluation for quality improvement (papers four to seven); and
- Theme 3) Students' perceptions informing teaching and learning (papers eight to ten and paper three).

Themes 1 and 2 uncover the key factors underpinning the effective use of student feedback for quality improvement of teaching and learning in higher education. The publications are not chronologically linear attesting to the multifaceted and complex nature of this research.

The findings of the research reported in Theme 1 revealed that, when evaluation surveys are designed within a defensible teaching and learning paradigm and are tested to ensure they are valid and themselves defensible, anonymous student feedback can be successfully used for quality improvement.

The publications in Theme 2 present evidence that a school based and university-wide evaluation system is effective in improving students' perceptions of the quality of teaching

and learning. This occurs when it prompts students and teachers to reflect on the outcomes of learning and there is transparent and timely reporting of qualitative and quantitative feedback to all stakeholders. In particular the evaluation system is effective when feedback is translated into strategies for improvement and there are various approaches to closing the feedback loop. Theme 2 also reveals that a successful university-wide culture of quality improvement is achieved through effective leadership and the implementation of evidence based pedagogy and practice.

The papers in Theme 3 document the analysis of quantitative data and written comments from the students who participated in student evaluations and validated surveys, revealing the aspects of teaching and learning experiences which help and hinder student learning. Findings in this theme are related to modes of study, the importance of academic-student relationships, accessibility, responsiveness and clear communications by their teachers, particularly when related to assessment requirements, and timely feedback.

The key research findings of this thesis reveal that qualitative and quantitative student feedback should be interrogated collectively to provide meaningful feedback fundamental to the improvement of the quality of students' teaching and learning experiences. However, to fully understand the impact of teaching and learning experiences on student learning outcomes it is critical that student feedback be correlated with other data, including measures of learning outcomes.

Acknowledgements

Abbreviations

ADRI	Approach, Deployment, Results and Improvement
AUQA	Australian University Quality Audit
AUSSE	Australasian Survey of Student Engagement
AUTCS	Australian University Teaching Criteria and Standards
AVCC	Australian Vice-Chancellors Committee
CAA	Commission for Academic Accreditation
CEW	Course Evaluation on the Web
CEQ	Course Experience Questionnaire
DEST	Department of Education Science and Training
FYE	First Year Experience
GDS	Graduate Destination Survey
LTPF	Learning and Teaching Performance Fund
MCEETYO	Ministerial Council on Employment, Education, Training and Youth Affairs
OBE	Outcomes based education
OFE	Outcomes focused education
SEEQ	Student Evaluation of Educational Quality
SELTQ	Student Evaluation of Learning and Teaching Questionnaire
TEQSA	Tertiary Education Quality Standards Agency
UES	University Experience Survey (Note: this survey was renamed the Student Experience Survey in 2015)
USOS	Undergraduate Sources of Stress
VET	Vocational Education and Training

Definitions

A 'course' refers to a program of study leading to an award.

A 'unit' refers to a discrete entity of study within a subject area that is a component of a course.

List of publications included as part of the thesis

Oliver, B., Tucker, B., Gupta., R., & Yeo, S. (2008). eVALUate: An evaluation instrument for measuring students' perceptions of and learning outcomes. *Assessment & Evaluation in Higher Education, 33,* 619-630. doi: 10.1080/02602930701773034 (SJR = 1.173 [ranked 57/620 in field of Education], Impact factor 0.912, H = 37; Cited by 46)

Tucker, B. (2013). Development of a student evaluation quality culture: The eVALUate experience at Curtin. In M. Shah & C. S. Nair (Eds.), *CAA Quality Series No. 5* (Vol. June, pp. 16-33). Abu Dhabi: Ministry of Higher Education and Scientific Research. Retrieved from https://www.caa.ae/caa/desktopmodules/qualityseries.aspx (Invited publication; Cited by 2)

Tucker, B. M. (2013). Student evaluation to improve the student learning experience: An Australian university case study. *Educational Research and Evaluation, 19*, 615-627. doi: 10.1080/13803611.2013.834615 (Invited publication) (SJR = 0.411 [ranked 226/620 in field of Education], H = 12; Cited by 6)

Tucker, B. (2014). Student evaluation surveys: anonymous comments that offend or are unprofessional. *Higher Education*, 1-12. doi: 10.1007/s10734-014-9716-2 (SJR = 1.112 [ranked 63/620 in field of Education], Impact factor 0.937, H = 22; Cited by 2)

Tucker, B., Halloran, P., and Price, C. (2013). Student perceptions of the teaching in online learning: An Australian university case study. In S. Frielick, N. Buissink-Smith, P. Wyse, J. Billot, J. Hallas & E. Whitehead (Eds.), *36th HERDSA Annual International Conference* (pp. 470-484). Auckland, New Zealand: Research and Development in Higher Education: The Place of Learning and Teaching. Retrieved from http://www.herdsa.org.au/?page_id=3502 (Cited by 3)

Tucker, B., Jones, S., Mandy, A., & Gupta, R. (2007). Physiotherapy students' sources of stress, perceived course difficulty and paid employment: Comparison between Western Australia and United Kingdom. *Physiotherapy Theory and Practice, 22*(6), 317-328. (SJR = 0.519 [ranked 16/81 in field of Physical Therapy, Sports Therapy and Rehabilitation], H = 23; Cited by 25)

Tucker, B., Jones, S., Straker, L., & Cole, J. (2003). Course Evaluation on the Web: Facilitating student and teacher reflection to improve learning. *New Directions for Teaching and Learning, 96*, 81-93. doi: 10.1002/tl.125 (Invited publication) (SJR = 0.112 [ranked 543/620 in field of Education], H = 8; Cited by 38)

Tucker, B., Jones, S., & Straker, L. (2008). Online student evaluation improves Course Experience Questionnaire results in a physiotherapy program. *Higher Education Research & Development, 27*, 281-296. doi: 10.1080/07294360802259067 (SJR = 1.264 [ranked 49/620 in field of Education], Impact factor 0.648, H = 13; Cited by 24)

Tucker, B., Oliver, B., & Gupta, R. (2012). Validating a teaching survey which drives increased response rates in a unit survey. *Teaching in Higher Education*, 1-13. doi: 10.1080/13562517.2012.725224 (SJR = 0.816 [ranked 88/620 in field of Education], Impact factor 0.545, H = 17; Cited by 4)

Tucker, B., Pegden, J., & Yorke, J. (2012). Outcomes and evaluations: Is there a relationship between indicators of student success and student evaluations of learning? In N. Brown, S. M. Jones & A. Adam (Eds.), *35th HERDSA Annual International Conference. Research and Development in Higher Education: Connections in Higher Education* (Vol. 35, pp. 326 - 339). Hobart Australia: Higher Education Research and Development Society of Australasia Inc. Retrieved from http://www.herdsa.org.au/?page_id=2885 (Cited by 3)

Additional publications relevant to the thesis and publication themes

This thesis comprises a series of original published works structured into three main themes: 1) survey development, validation and practice, 2) student evaluation for quality improvement, and 3) student perceptions informing teaching and learning. Table 1 outlines how each publication (including conference presentations and publications) contributes to the themes outlined in this thesis. Conference presentations provided critical peer review of developing concepts which informed the inquiry paradigm of this research.

Authors(s)	Type	Year	Title
Theme 1: Survey development, validation and practice			
Blackmore, A.M., Tucker, B., & Jones, S.	Journal	2005	Development of the undergraduate sources of stress questionnaire
Kinash, S., Naidu, V., Knight, D., Judd, M-M., Nair, S., Booth, S., Fleming, J., Santhanam, E., Tucker, B., & Tulloch, M.	Journal	2015	Student feedback: A learning and teaching performance indicator
Kinash, S., Naidu, V., Fleming, M., Fleming, J., Nair, S., Santhanam, E., Tucker, B., & Tulloch, M.	Conference Poster	2014	Benchmarking student evaluations domestically and globally
Kumpas-Lenk, K., Tucker. B., & Gupta, R.	Journal	2014	Validation of a unit evaluation survey for capturing students' perceptions of teaching and learning: Comparison among Australian and Estonian students
Nair, S., Tucker, B., Ballantyne, C., & Collings, D.	Conference presentation	2013	The nuts and bolts of evaluations: A practitioner's perception
Oliver, B., Tucker, B., Ballantyne, C., & Collings, D	Conference presentation	2005	Moving student evaluation of teaching online: Reporting pilot outcomes and issues with a focus on how to increase student response rates
*Oliver, B., Tucker, B., Gupta, R., & Yeo, S.	**Journal**	**2008**	**eVALUate: An evaluation instrument for measuring students' perceptions of their engagement and learning outcomes**
Oliver, B., Tucker, B., & Pegden, J.	Conference presentation	2006	Analysing qualitative feedback using CEQuery and SPSS Text
Oliver, B., Tucker, B., & Pegden, J.	Conference paper	2007	An investigation into student comment behaviours: Who comments, what do they say, and do anonymous students behave badly?
Pegden, J., & Tucker, B.	Conference paper	2009	Student evaluation of their learning: Differences in male and female students' perceptions of their units

Pegden, J., & Tucker, B.	Conference presentation	2010	Which students give feedback: An analysis of participation rates and feedback by semester weighted average
Pegden, J., & Tucker, B.	Journal	2012	Does the timing of evaluation matter? An investigation into online student feedback and whether timing has an impact
Tucker, B., & Pegden, J.	Conference presentation	2010	Closing the loop: A holistic approach to student feedback at Curtin.
*Tucker, B., Oliver, B., & Gupta, R.	**Journal**	**2012**	**Validating a teaching survey which drives increased response rates in a unit survey**
Tucker, B., Oliver, G., & Pegden, J.	Conference presentation	2008	eVALUate: Development and validation of a teaching survey

Theme 2: Student evaluation for quality improvement

Bowman, S., Aungles, P., & Tucker, B	Conference presentation	2012	Panel Forum
Chalmers, D., Cummings, R., Elliott, S., Stoney, S., Tucker, B., Wicking, R., & Jorre de St Jorre, T.	Conference presentation	2014	Australian university teaching criteria and standards framework
Jones, S., & Tucker, B.	Conference presentation	2005	Course evaluation on the web (CEW) makes a difference to GCEQ results
Jones, S, Tucker, B, Straker, L, and Cole, J	Conference presentation	2002	Course Evaluation on the Web - quality improvement in physiotherapy education
Jones, S., Tucker, B., Straker, L., & Cole, J.	Conference presentation	2002	Educational program evaluation on the web: A quality improvement mechanism
Kinash, S., Judd, M-M., Naidu, V., Santhanam, E., Fleming, J., Tulloch, M., Tucker, B., & Nair, C.	Office for Learning and Teaching, Australian Government Project Report	2015	Measuring and improving student course engagement and learning success through online student evaluation systems
Kinash, S., Knight, D., Naidu, V., Bolton, L., Booth, S., Miller, J., Nair, S., Santhanam, E., Tucker, B., & Tulloch, M.	Conference paper	2013	Using student feedback through online surveys to improve learning and teaching: Research conducted by eight Australian universities
Kinash, S., Knight, D., Naidu, V., Bolton, L., Booth, S., Miller, J., Nair, S., Santhanam, E., Tucker, B., & Tulloch, M.	Conference paper	2013	Reporting student feedback as a university performance indicator to students
Kinash, S., Naidu, V., Knight, D., Bolton, L., Booth, S., Miller, J., Naidu, S., Nair, S., Santhanam, E., Tucker, B.	Conference poster	2013	The online place and student space of teaching feedback through eight university case studies

Mazzolini, M., Hewlett, S., Tucker, B., & Marchment, W.	Conference presentation	2013	Panel Forum: How to measure learning and teaching
Nair, C. S., Tucker, B., & Shah, M.	Conference presentation	2012	Using student voice data for change
Oliver, B., Jones, S., Tucker, B., & Ferns, S.	Conference paper	2007	Are our students work-ready?: Graduate and employer feedback for comprehensive course review
Oliver, B., Jones, S., Tucker, B., & Ferns, S.	Conference paper	2007	Mapping curricula: Ensuring work-ready graduates by mapping course learning outcomes and higher order thinking skills
Oliver, B., & Tucker, B.	Conference presentation	2004	Curriculum mapping of assessment tasks within an outcomes-focused framework: A school-based professional development approach
Oliver, B., Tucker, B., & Jones, S.	Conference presentation	2006	eVALUate: Driving change by reporting students' perceptions of what helps and hinders their achievement of graduate outcomes at the course level
Straker, L., Jones, S., & Tucker, B.	Conference presentation	2000	Course Evaluation on the Web (CEW): A 'learning community' tool designed to enhance teaching and learning
*Tucker, B.	**Journal**	**2013**	**Student evaluation to improve the student learning experience: An Australian university case study**
*Tucker, B.	**Journal**	**2013**	**Development of a student evaluation quality culture: The eVALUate experience at Curtin**
Tucker, B., Cummings, R., Chalmers, D., Elliott, S., Stoney, S., Wicking, R., & Jorre de St Jorre, T.	Conference poster	2014	One university's experience of embedding the Australian university teaching criteria and standards framework
Tucker, B., Jones, S., & Straker., L.	Conference presentation	2003	Quality improvement using reflective practice on teaching and learning - a report on the impact on CEQ data
Tucker, B., Jones, S., Straker, L., & Cole, J.	Conference presentation	2002	Educational program evaluation on the web: A quality improvement mechanism
Tucker, B., Jones, S., Straker, L., & Cole, J.	Conference presentation	2002	Use of online course evaluation for mentoring teachers
Tucker, B., Jones, S., Straker, L., & Cole, J.	**Journal**	**2003**	**Course Evaluation on the Web: Facilitating student and teacher reflection to improve learning**
*Tucker, B., Jones, S., & Straker, L.	**Journal**	**2008**	**Online student evaluation improves course experience questionnaire results in a physiotherapy program**

Tucker, B., & Pegden, J.	Conference presentation	2012	Embedding the eVALUate culture: Communicating to Curtin stakeholders
Tucker, B., Straker, L., Jones, S., Cole, J., & Ots, J.	Conference presentation	2001	Enhancing teaching and learning using course evaluation on the web (CEW)

Theme 3: Student perceptions informing teaching and learning

Mandy, A., Tucker, B., & Tinley, P.	Journal	2006	Sources of stress in undergraduate podiatry students in the United Kingdom and Australia
Halloran, P., Price. C., Tucker, B., & Davis, M.	Conference Journal	2014	Notion of quality: Student perceptions of what needs improvement
Oliver, B., Jones, S., & Tucker, B.	Conference presentation	2006	Feedback on feedback: Exploring students' perceptions of how feedback on their learning helps or hinders learning effectiveness
*Tucker, B.	**Journal**	**2014**	**Student evaluation surveys: Anonymous comments that offend or are unprofessional**
*Tucker, B., Halloran, P., & Price, C.	**Conference Journal**	**2013**	**Student perceptions of the teaching in online learning: An Australian university case study**
*Tucker, B., Jones, S., Mandy, A., & Gupta, R.	**Journal**	**2007**	**Physiotherapy students' sources of stress, perceived course difficulty and paid employment: Comparison between Western Australia and United Kingdom**
Tucker, B., Jones, S., Wilson, C., & Blackmore, M.	Conference presentation	2004	Physiotherapy students' sources of stress, coping strategies and implications for undergraduate education
Tucker, B., & Kumpas, K	Conference presentation	2013	Benchmarking student perceptions of their achievement of learning: A case study of Estonia and Australia
Tucker, B., Oliver, B., & Pegden, J.	Conference presentation	2007	Students' perceptions of their engagement and motivation in learning
Tucker, B., Oliver, B., & Yeo, S.	Conference presentation	2005	Reporting student feedback to teachers: What teachers want to know
Tucker, B., & Pegden, J.	Conference presentation	2008	Students' perceived motivation to learn: Consistency across units
*Tucker, B., Pegden, J., & Yorke, J.	**Conference Journal**	**2012**	**Outcomes and evaluations: Is there a relationship between indicators of student success and student evaluations of learning?**

* refers to published papers (also highlighted in bold) submitted as part of this thesis

A full reference list is included in the section: Additional publications relevant to the thesis,

(page 71).

Contents

1.0   Chapter one - Context and research design

A gradual reorientation of policies and practices toward learning
rather than teaching has had implications for evaluation practices.
In a contextually aligned system the institutional mission,
strategic objectives, educational methods, assessment, and
evaluation approaches are congruent (Cannon, 2001, p. 87).

This chapter explains the higher education context for using student feedback to inform quality of teaching and learning. The need for this research has been stimulated by changes in government initiatives and a focus on students' achievement of learning. Central to this chapter therefore is an outline of how government accountability has been a causal agent for change in student evaluations, and how the need for the development of a new student evaluation system has been in response to a focus on learning outcomes and the implementation of outcomes based education (OBE) in the Australian secondary education system. The research methodology used to test and analyse the research in this thesis is outlined. This chapter therefore provides the theoretical framework and underpinning principles for this research. This chapter concludes by presenting the scholarly contribution of this work to the research literature and identifies the research limitations.

1.1   Introduction

Surveys comprising student feedback have been collected by universities for decades. However there is little published research on the methods for capturing the student voice and subsequently on how student feedback is used to improve the student experience. The purpose of this research is to critically investigate the role of student feedback through online unit and teaching evaluation that has brought about a significant cultural shift in teaching and learning practice at Curtin University. This thesis focuses on the development, implementation and embedding of a university-wide student evaluation system for the purpose of informing teaching and learning quality and improving their experience in higher education. Therefore the focus of this research is on the **student voice** and using student feedback on their experience of teaching and learning given that students are the key recipients of education.

This research, undertaken as part of a higher degree by research, is timely for the following reasons:

- There is a gap in the current literature on evidencing the link between student evaluations and quality improvement.

- There had been no other reported survey system that uses a validated instrument focusing on students' perceptions of their achievement of the learning outcomes.
- There is no other reported unit evaluation survey that asks students about their motivation and engagement in learning.
- There is a lack of similar studies reporting what students say and how this links to student outcomes.

Student evaluation systems have been utilised in higher education world-wide since the 1950s (Knapper, 2001) . There are multiple stakeholders in evaluations of teaching and learning; students, academics, university executive, employers, parents, accreditation bodies, and government quality assurance agencies (Knapper, 2001). Whilst student feedback can be obtained in many informal ways, formal instruments provide a mechanism for obtaining feedback from an entire student group and documenting students' experiences in a systematic way (Narasimhan, 2001). In the 1960s the evaluation of teaching was driven by students who wanted to evaluate their teachers and requirements by authorities for public accountability in countries such as the United States and United Kingdom (Ory, 2000). In the 1970s, these countries obtained information from students to assist in the development of schools and universities and from the 1980s, the demand for evaluation systems emerged from administrative needs such as performance monitoring and to inform quality improvement (Ory, 2000). Woodhouse (2014) argues that since the 1980's, the higher education sector has collected enormous amounts of data, but only uses a fraction of it for quality improvement. David Woodhouse is Commissioner of Development with the Commission for Academic Accreditation in the United Arab Emirates and was founding Executive Director of the Australian Universities Quality Agency (2001 to 2011) and founding Director of the New Zealand Universities Academic Audit Unit (1994 to 2001). Woodhouse reflects on the use and misuse of data in higher education:

> *When I was a dean of a faculty in Australia in the 80's, I worked hard to encourage my staff to carry out student evaluations of teaching. 20 years later, as a head of the Australian Universities Quality Agency, I was constantly trying to get institutions to reduce the number of evaluations they do because they had become at best useless and at worst counter-productive. Institutions could probably gather less data if they use it more effectively (Woodhouse, 2014, p. 1).*

Since 1993, Australian universities have largely depended on the graduate Course Experience Questionnaire (CEQ) to inform themselves on perspectives of teaching and learning from first year graduates and for benchmarking courses within fields of study. Prior to 2003, there were few Australian universities using online student evaluation systems to systematically collect student feedback on teaching and learning. With increased pressures

for accountability in the delivery of quality education and subsequent advent of performance based funding by the Australian Government, Australian universities, including Curtin University, refocused their priorities and reviewed and redeveloped their systems and instruments.

This thesis provides a scholarly synthesis of a series of original published works related to the development of a school-based student evaluation system and later, a university-wide student evaluation system at Curtin University known as eVALUate. The research includes the development of surveys for evaluating teaching and learning for a school and later, Curtin, and includes further research into matters unveiled by students and staff. Internationally and nationally, student evaluation surveys (either single surveys or separate unit and teaching surveys) have focused on the measurement of the quality of teaching. The unique feature of the eVALUate unit survey is that the items ask students' about their perceptions of what is helping them to achieve learning outcomes and what they bring to the learning in terms of their motivation and engagement. Fundamental to this thesis is the shift to *student learning* and the improvement of the student teaching and learning experience from a *focus on teaching* and teacher behaviours.

The establishment of an evaluation system with validated surveys, now implemented in three Australian universities, provides unique opportunities to benchmark student experiences internally and externally, at course and unit level. This research, and particularly the analysis of students' perceptions and comments, has the potential to inform new pedagogies in teaching and learning at a time when there is rapid transformation in the role of universities in society and in how they operate in the new digital age (Ernst and Young, 2012; Hajkowicz, Cook, & Littleboy, 2012; L. Johnson, Adams, & Cummins, 2012; Sharples et al., 2012).

This research will support those countries who have recently implemented outcomes based education (OBE) within Europe as part of educational reform through the Bologna process (Adam, 2008; Attard, Di Ioio, Geven, & Santa, 2010; Päll, 2010).To date, research collaborations have been established with colleagues in Estonia investigating the impact of OBE on students' perceptions of learning using eVALUate (Kumpas-Lenk, Tucker, & Gupta, 2014; Tucker & Kumpas, 2013).

1.2   Literature review

This review, addressing the first research question, encompasses broad topics related to the core factors which underpin the development of a student evaluation system that captures student feedback for quality improvement. The literature presents an historical perspective of the measures previously used to inform quality in higher education. A brief historical account

of the Australian Government initiatives that have influenced these measures is provided. The review outlines the development of outcomes based education in Australia and how this educational approach informed the development of an outcomes-focused education approach at Curtin.

1.2.1   The role of student feedback in informing quality in higher education

The series of original published works presented in this thesis has taken place over more than a decade. During this time, there has been substantial change in the sector in relation to the purpose of student evaluation systems; most notably there has been a perceived tension in their use in quality assurance as opposed to quality improvement (MacDonald, 2010; Penny, 2003).

The notion of students having a voice and giving feedback on the quality of their teachers is not new. Reference to students evaluating their teachers has been made in ancient times in Antioch in the time of Socrates (Marsh, 1987) and in medieval history where students responded to teaching through the stamping of their feet or by walking out of the class (Knapper, 2001). Traditionally, evaluation systems were more commonly used for formative evaluation, for the purpose of improving teaching and learning (Knapper, 2001). However the establishment of external quality assurance bodies (particularly in the United Kingdom and in Australia), and an emerging requirement for teaching to become a more publicly visible activity, has seen a shift to also using evaluations systems for summative evaluation, for accountability purposes including the allocation of funding, for promotions and teaching awards (L. Arthur, 2009; Barrie, Ginns, & Symons, 2008; Chalmers, 2007; Hendry & Dean, 2002; Leckey & Neill, 2001; Massy & French, 2001; Meade & Woodhouse, 2000; Nilsson & Wahlén, 2000; Scott & Hawke, 2003; Shah & Nair, 2012).

The term 'quality' in relation to higher education has various definitions according to the context in which it is used; for example whether it refers to quality assurance or quality improvement. The United Kingdom Quality Assurance Agency for Higher Education (QAA)[1] defines quality assurance as the *systematic monitoring and evaluation of learning and teaching, and the processes that support them, to make sure that the standards of academic awards meet expectations, and that the quality of the student learning experience is being safeguarded and improved*. The QAA defines quality enhancement as *taking deliberate steps at institutional level to improve the quality of learning opportunities.* Quality improvement is also referred to as quality enhancement and these terms are used interchangeably in the literature. For the purpose of this thesis, the term quality improvement is used.

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[1] http://www.qaa.ac.uk/en

Government bodies, quality assurance agencies and university executive generally focus on quality as being a measure of fitness for purpose, consistency and accountability (quality assurance) (Harvey & Green, 1993; Lomas, Teelken, & Ursin, 2010). Government and quality assurance agencies establish frameworks and procedures designed to maintain quality in higher education. This managerial focus is largely based on the concept that universities need to be accountable, setting targets that meet internal and external standards (Lomas et al., 2010). Prior to 2011, standards had not yet been developed in the Australian context and the Australian Government had not put forward any definition of quality and standards (Shah, 2011). In 2000, the Australian Government implemented the first quality assurance framework for higher education and in 2001 established an external agency called the Australian University Quality Agency (AUQA) (Shah, 2011). AUQA defined quality as *fitness for purpose* and universities were reviewed in five yearly cycles according to their specified purpose, that is, their mission, goals and objectives (Shah, 2011).

Because of external quality assurance imperatives, universities in Australia adopted the same, or similar, quality performance indicators as those used by the federal government. Over the last decade, the indicators most commonly used included graduate feedback on teaching and learning (based on the CEQ), graduate outcomes (employment and further studies, based on the Graduate Destination Survey (GDS)), student progress and retention rates. Many Australian universities have included measures of student engagement including the First Year Experience (FYE) Survey and the Australasian Survey of Student Engagement (AUSSE) Survey. Universities use data from the CEQ and AUSSE surveys to compare their institution's performance against others at whole of university level and, in the case of the CEQ, at the level of fields of education (Ramsden, 1999; Stella & Woodhouse, 2007; Wilson, Lizzio, & Ramsden, 1996).

For students, the quality of their experience at university is determined by multiple factors (Douglas, Douglas, McClelland, & Davies, 2014; Woodall, Hiller, & Resnick, 2012) which include their experience within a unit, a course of study, the learning environment (at a local level such as a school), university environment (including library, learning support services, facilities and administrative services) and for many students, the broader environment (including community and culture) (Tucker, Jones, Straker, & Cole, 2003). Internal surveys such as Curtin's Annual Student Satisfaction Survey and national surveys such as the Australian University Student Finances Survey, AUSSE, FYE and the University Experience Survey (UES) provide universities with student perceptions of their experiences most particularly in relation to their learning and university environments. Unit and teaching surveys (commonly referred to as Teaching Quality Instruments or Student Evaluation of Teaching surveys) capture a sample of students' perceptions of their teaching and learning experience at the level of the unit.

The data obtained from institutionally developed surveys related to the student experience are utilised by universities for quality improvement with the aim of improving and transforming teaching and learning and strengthening, augmenting and improving university practices and processes. Most commonly, universities have benchmarked their institution's performance using national survey results. Current research however suggests that although data from institutional teaching and learning surveys is collected, there is little evidence that such data is utilised systematically to improve the student experience (Barrie et al., 2008; Kinash, et al., 2013b, 2014a, 2014b). Some universities use institutional survey measures, such as a single item of overall satisfaction with a unit, to identify their institution's strengths and weaknesses and to identify key targets and performance measures for senior executive (Kinash, et al., 2013a; Shah & Nair, 2012). Student survey data provides one lens, the student's perspective, to inform teaching development and the quality of the student experience. National reviews of institutional evaluation systems in Australia have revealed that many universities have used items modified from the CEQ to evaluate and improve teaching and learning quality (Chalmers, 2007, 2008; Gribble, Yeo, & Zadnik, 2003; S. Jones & Tucker, 2005; Niland, 1999; Oliver & Yeo, 2003; Patrick, 2003; Symons, 2004; Tucker et al., 2003; Waugh, 1999). Other universities have developed their own teaching and learning surveys (Barrie et al., 2008). Such variation across institutions has hampered the ability for universities to benchmark their institutional surveys and to deploy strategies for improving the student experience across the sector. A systematic approach to data collection and analysis is essential to determine the effects of particular national educational initiatives, innovations and pedagogies, and to better understand the student experience of teaching and learning (Nair, Bennett, & Mertova, 2010; Nair & Bennett, 2012).

Although many Australian universities have initiated and implemented student evaluation as part of their internal strategy to enhance teaching and learning quality (Bennett, 2010), they have also increasingly been influenced and directed by external government initiatives to improve the quality of higher education. Since 2012, subsequent Australian governments have shifted their influence on universities from assessing and rewarding quality using student experience measures to having a new regulatory control (Shah, 2011).

1.2.2   Australian Government initiatives informing quality

Changes in federal government initiatives have influenced the measures used in Australia to determine quality teaching and learning in higher education. Details of the Australian initiatives and practices in determining and identifying quality teaching and learning in higher education prior to 2007 have been published elsewhere (Chalmers, 2007). The following summarises the major initiatives influencing the investigation period of this research. Prior to 2004, a number of indicators were used in Australia to demonstrate quality in learning and

teaching. These related to graduate outcomes, internationalisation, reputation of courses, retention and completion rates, student satisfaction (based on the CEQ), teaching resources, support services, financial resources and teacher scholarship (Australian Vice-Chancellors' Committee, 2004). In 2000, the Ministerial Council on Employment, Education, Training and Youth Affairs (MCEETYO) established the AUQA, an independent, national quality assurance agency. A number of teaching and learning initiatives were formed and in 2003, the Australian Government introduced performance based funding with the introduction of the Learning and Teaching Performance Fund (LTPF) using graduate feedback on teaching and learning, graduate outcomes (employment and further studies), student progress and retention rates as indicators of teaching and learning quality (Department of Education Science and Training, 2004). A *Review of Australian Higher Education* was conducted in 2008 resulting in the cessation of the LTPF and a phasing out of AUQA (Bradley, Noonan, Nugent, & Scales, 2008). The federal government accepted the majority of the Reviews' recommendations which highlighted the need for a strong focus on **measuring and monitoring student engagement with a focus on the connection with student's achievement of learning outcomes**. In 2012, a new regulatory body, the Tertiary Education Quality Standards Agency (TEQSA) was formed in Australia.

TEQSA is an independent national regulator of the Australian higher education sector which is responsible for: registering all higher education providers; accrediting all courses; the quality assurance of higher education providers; and promoting the sector's adherence to national standards of quality (see www.teqsa.gov.au). The roles of TEQSA are articulated within an Act of Parliament, the Tertiary Education Quality and Standards Agency Act 2011. These roles in brief are to: 1) provide a consistent national regulation of higher education; 2) regulate higher education using a standards-based quality framework; 3) protect and enhance Australia's reputation for, and international competiveness in, higher education; 4) encourage and promote a higher education system that is appropriate to meet Australia's social and economic needs; 5) protect students by requiring the provision of quality higher education; and 6) ensure that students have access to information relating to higher education in Australia. A Higher Education Standards Framework 2011 (Threshold Standards) was developed and later amended in 2013. This Framework articulates a number of Standards including those for Course Accreditation that outline elements for course monitoring, and review. Despite continuing criticism in Australia over the use of student perceptions for the purpose of quality assurance (Lodge & Bonsanquet, 2013), the role of student feedback to inform quality assurance and scholarly teaching is outlined in TEQSA Guidance Notes which were undergoing consultation across the Australian higher education sector in early 2015[2].

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[2] Consultation documents are available at http://www.teqsa.gov.au/.

Measures for ensuring quality that have been recently proposed include a new survey [the University Experience Survey (UES)], refinement of the GDS, the assessment of learning outcomes and admission testing (Australian Council for Educational Research, 2012; Coates, 2010; Department of Education Employment and Workplace Relations, 2011) and institutions are focusing on evidencing academic and graduate standards. In order to provide current and future students with information to inform them of the quality of higher education, performance measures of the student experience are publically available on a government website called MyUniversity (Department of Industry Innovation Science Research and Tertiary Education, 2012b).

In Australia, the government's focus on students' achievement of learning outcomes and the measurement and monitoring of student engagement has been met by collecting university-wide data using the UES and the AUSSE. The government has also indicated that they expect universities to undertake benchmarking using quality indicators suggesting that standardised surveys, including unit evaluations will be useful to institutions in addition to the CEQ, GDS, AUSSE, and UES. At the same time, universities in Australia largely continue to use student evaluation surveys that have not been validated and that focus on the evaluation of teaching or on teacher activities (Barrie et al., 2008). Those validated surveys reported in the literature, labelled Student Evaluation of Teaching surveys, comprise similar items to those included in Australian surveys and they also focus on what the teacher 'does'. However, in the last decade, the pedagogy of teaching and learning in higher education has seen a shift from *teacher focus* to *student focus*. In addition, it is recognised that students are integral to their learning through their motivation and engagement (Biggs, 1999, 2003b; Coates, 2005, 2006; Huba & Freed, 2000). This creates a tension in pedagogy and the fitness for purpose in student evaluation surveys (Alderman, Towers, & Bannah, 2012; Barrie, 2000; Carey & Gregory, 2003; Huba & Freed, 2000).

Within Curtin, quality improvement practices had already become established in some schools (Tucker, Jones, Straker, et al., 2003) and in 2003, the university recognised the need to develop a philosophy of teaching and learning founded on outcomes focused education (OFE). At the same time, it was determined that a university-wide student evaluation system was essential to allow for the systematic gathering of student feedback on their experiences and transparent reporting of their views for improving teaching and learning at Curtin. The core principles of OFE, described in the following section, underpins the philosophy of teaching and learning at Curtin and the learning outcomes approach to the development of the eVALUate surveys.

1.2.3   Background on outcomes based education in Australian higher education

Traditionally, the quality of universities has been measured by evaluating factors such as its resources, research funding, faculty awards, student entrance examination scores, accomplishments or credentials of faculty academics and types of programs offered by the institution (Frye, 1999; McDaniel, Felder, Gordon, Hrutka, & Quinn, 2000). In recent years there has been a greater emphasis on the products or results of education so that investments by governments can be evaluated. This need for accountability had been an important reason for the rapid development of OBE in the United States and United Kingdom in the 1980s and 1990s, and has also been implemented in numerous countries throughout Europe, Canada, New Zealand and South Africa (Malan, 2000). Accrediting agencies and professional societies are now evaluating universities' processes for determining desirable outcomes, measuring how well those outcomes are achieved and using results of evaluations to improve programs (Carey, Perrault, & Gregory, 2001).

The stimulus for OBE in Australia has come from political, economic and educational sources (Alderson & Martin, 2007; Killen, 2000). Over the last decade, there has been a change in focus and commitment by the Australian Government to teaching and learning as well as research and management, and the adequacy of university quality assurance systems. The measure of institutional excellence has increasingly focused on how well institutions develop students' attributes and abilities and measuring what students know and can actually do (Frye, 1999).

Much of the literature and development of OBE has been from the work of Spady (1994) and the development of this educational philosophy in the secondary education system. In 1998, the Curriculum Council of Western Australia mandated that OBE be adopted in secondary school. OBE was also embraced by the Australian Vocational Education and Training (VET) sector in the form of competency based training (which has its roots from OBE) (Alderson & Martin, 2007). OBE was sanctioned by Academic Council at the University of Western Australia for implementation in 2004 (Daziell & Gourvenec, 2003).

OBE is a process that involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than the accumulation of course credits (Alderson & Martin, 2007; Smith & Dollase, 1999; Willis & Kissane, 1997). OBE shapes the way of designing, developing, delivering, and documenting the teaching and learning experience in terms of the achievement of pre-determined outcomes (Spady, 1994). An OBE system is one in which stated learning outcomes drive the course content and assessment structure. Students' results are reported solely in terms of the outcomes achieved rather than percentage marks or grades. There is

usually a hierarchical statement of levels of achievement of outcomes. Teaching in an outcomes based system requires the development of a clear focus on what is essential for learners to be able to do successfully, and then designing strategies for students to achieve this (Spady, 2001). Whilst there is no specified style of teaching or learning within OBE, traditional education approaches that include direct instruction of facts are discouraged (Alderson & Martin, 2007). A fundamental principle of OBE is the expectation about the role of students in the education process. Students are challenged as learners to be: 1) more active rather than being passive recipients of knowledge, 2) independent and 3) intrinsically motivated (Malan, 2000; McDaniel et al., 2000).

Spady (1994) developed four essential principles of OBE: 1) clarity of focus, 2) designing back, 3) high expectations and 4) expanded opportunities. Academics involved in curriculum design are able to identify a clear focus (**clarity of focus**) on what they want their students to be able to do successfully upon graduation (Spady, 2001). Once the outcome of the graduate has been identified, the curriculum can be constructed by backward mapping of knowledge and skills (**designing back**). This top down approach to curriculum design provides a clear path for achieving the course outcome and the curriculum is focused on the essential knowledge, skills and attributes for achieving this. Spady (2001) also argues that OBE provides teachers and students with **expanded opportunities** for achieving success. This allows for a flexible approach (in time and instructional method) for students' learning needs and more than one opportunity (such as resources or learning opportunities) to succeed (Killen, 2000). Major time restraints cannot be ignored but time is seen as a flexible resource rather than the factor that controls learning (Killen, 2000). In addition, OBE provides the platform for producing **high expectations** so that challenging standards can be set as final outcomes for the achievement of graduation (Spady, 1994).

The implementation of OBE in the Western Australian primary and secondary education curriculum was considered a comprehensive educational model in which a hierarchical framework of student learning outcomes was specified (Donnelly, 2007). This was not organised in either discipline areas, units of study or even years of study, but in 'learning areas' (each consisting of a number of vertical strands) with horizontal levels specifying increasing degrees of sophistication of knowledge or skills. Students' work was no longer reported in marks or grades; students were 'levelled' according to what they demonstrated they knew or could do. The 'outcome statements' were general enough for students to demonstrate that they were working at a particular level, through a number of subjects, in different contexts, or in different ways.

However, OBE became the subject of much criticism particularly from parents and teachers in the secondary education system and following widespread condemnation of the system it was eventually discontinued in 2007 (Donnelly, 2007). Criticism was particularly fixated on

the inappropriateness of the standardised testing and the outcomes developed. The apparent failings of OBE in the school sector, however, were more a result of implementation and resourcing than pedagogy. Cooper (2007) noted that the merits of OBE in Australia were yet to be realised and found that ineffective implementation and a failure to adequately prepare secondary school teachers in constructivist pedagogies had affected its adoption. The fundamental principles of OBE are still widely advocated and endorsed in terms of student's achievement of challenging learning outcomes that drive student learning. These core principles have underpinned OFE in higher education which is at the heart of philosophy of teaching and learning at Curtin.

1.2.4 Principles of outcomes focused education

At the same time that the OBE approach was being implemented to promote educational renewal, higher education providers such as Curtin were reviewing their philosophy of teaching and learning (Oliver, 2004, 2006; Oliver & Tucker, 2004; Oliver, Tucker, Gupta, & Yeo, 2008; Tucker, 2013b). Curtin recognised that eligible students from the Western Australian secondary education OBE system could enrol in the University in 2005. Hence, in February 2004 Curtin's Academic Senate endorsed the introduction of OFE to student learning throughout the University.

The terms OBE and OFE have often been confused and used synonymously. Added to this confusion is the term 'outcomes based teaching and learning' (also referred to as OBE version 3) which is used by Biggs and Tang (2007) to describe how constructive alignment is the means of enhancing teaching and learning. This description is consistent with the principles of OFE described in this section, the term adopted by Curtin and included in its stated philosophy of teaching and learning.

An OFE system is one in which student outcomes (the result of student learning) are specifically identified in discipline-based courses and units, and in which the assessment processes are designed specifically to assess students' achievement of the outcomes. Learning outcomes are clear, observable demonstrations of student learning that occur at or after a significant set of learning experiences (Spady, 2001). These demonstrations or performances reflect three elements: 1) what the student knows; 2) what the student can actually do with what they know; and 3) the student's confidence and motivation in demonstrating what they know (Spady, 2001). The most important feature of OFE is that all students are expected to be successful. A learning activity might be seen by students to be purposeful, useful and challenging but it should not be impossible (Andrich, 2002; Killen, 2000). Learning outcomes are not values, attitudes, feelings, beliefs, activities, assignments, goals, or grades (Bouslama, Lansari, Al-Rawi, & Abonamah, 2003).

The purpose of OFE is that successful graduates from a course are able to demonstrate the stated achievement of knowledge, competence and qualities (attributes). OFE provides the impetus for structuring the educational experience as student-centred learning. In order to facilitate active student learning, learning environments must be created that enhance student learning, maximise essential student-teacher contact, foster student learning opportunities using peer interaction and integrate new technologies into the student learning process (McDaniel et al., 2000). Learning outcomes are used to support the development of active student learning through relevant learning activities and assessments (Biggs, 2003a). Constructive alignment incorporates the notion that learning outcomes are specified in terms of the 'level of understanding' students are required to achieve (Biggs, 2003a). Students need to construct meaning through relevant learning activities that are aligned with what the teacher devises in terms of intended learning outcomes, teaching methods, learning activities and assessment tasks (Biggs, 2003a).

Learner-centred education takes into consideration what students already know (their heredity, experiences, perspectives, backgrounds, talents, interests, capacities, needs) and focuses on learning, how it occurs and teaching practices that are most effective in promoting the highest levels of motivation, learning and achievement for all learners (Darden & Richardson-Jones, 2003). Learning is most effective if it is relevant and meaningful to the learner and when the learner is actively engaged in creating their knowledge and understanding by connecting what is being learned with prior knowledge and experience. An environment that contains positive interpersonal relationships and interactions and where the learner feels appreciated, acknowledged, respected and validated promotes the best learning experiences (Darden & Richardson-Jones, 2003).

The learning principles that are important in student-centred learning are: 1) that learning is an active search for meaning by the learner rather than a passive receiver of knowledge; 2) that learning requires frequent feedback and 3) that it involves the ability of the individual to monitor their own learning so that students can self-evaluate their learning practice (DeLyser et al., 2003). As far as many students are concerned, assessment **is** the curriculum and this will drive their learning (Ramsden, 2003). Hence it is critical that teaching, learning and assessment are aligned with student learning outcomes and assessment must measure the attainment of student learning outcomes (Biggs, 2003a; Carey & Gregory, 2003). Student learning should be linked with teaching effectiveness. Assessment should be linked with the achievement of learning outcomes, teaching effectiveness should be evaluated and finally, evaluations of learning and teaching should result in continuous course improvement (Carey et al., 2001).

This evidence based focus on student learning through an outcomes focused approach informed the development of the University's institutional statement, *Excellence in teaching*

and learning at Curtin (Curtin University of Technology, 2003), containing the following four tenets: teaching and learning is a partnership between staff and students; excellent teaching and learning focuses on the achievement of intellectually challenging learning outcomes in engaging learning environments and through flexible learning opportunities; assessment aligns with the learning outcomes; and systematic evaluation of teaching and learning is used to ensure quality. This statement of *Excellence in teaching and learning at Curtin* remained Curtin's philosophy of teaching and learning until 2014 and continues to underpin 1) curriculum development and review, and 2) innovative teaching and learning practices and strategies.

The major causes for change to the evaluation system at Curtin were the need for universities to be accountable to government imperatives and the change to OFE in response to the implementation of OBE in the secondary education system. Although the impetus to develop a student evaluation system for quality improvement was driven in part as a result of the implementation of performance based funding and the establishment of a national quality agency, Curtin had recognised the need to have a systematic and transparent system for the purpose of quality improvement and assurance.

1.3   Research questions

The study explored two main research questions to determine whether student feedback can improve the quality of teaching and learning in higher education.

1. **What are the key factors underpinning the effective use of student feedback for quality improvement of teaching and learning in higher education?**
2. **What do student perceptions of their teaching and learning experience reveal about the quality of their learning in higher education?**

1.4   Research design and methodology

This research adopted the naturalistic inquiry paradigm and heuristic qualitative inquiry largely using Curtin University as a case within the Australian and international higher education sector. The naturalistic and heuristic approach supported the researcher's complete immersion and self-reflection as a practitioner on the phenomenon of student feedback over a period of 16 years (Etherington, 2004; West, 2001). Naturalistic observation was utilised to enable observations of all stakeholders in the development and implementation of student evaluation systems in their natural 'setting'. Although formal note taking of stakeholder behaviours was not undertaken in this research, all communications, discussions, committee meeting notes and feedback from stakeholders have been

meticulously collected and noted over a period of more than 16 years and from an extensive range of settings and situations. As this research involved a direct and personal immersion in the field of student evaluations, self-reflection and self-discovery over the 16 year period, the research approach is best described as heuristic. The aim of using these research approaches was to explore all aspects of the topic, what stakeholders experience and to gain meanings from these interactions and reflections. This approach also enabled research on understanding teaching and learning in higher education from the perspective of the student. Field observations undertaken whilst developing a school and subsequently a university-wide student evaluation system affirmed those evaluation processes that are now embedded at Curtin and have previously been identified as best practice in the research literature. This inquiry approach underpinned the development of student evaluation processes and a quality culture for enhancing the student experience in teaching and learning at Curtin. The concept of *outcomes research* is undertaken to study student feedback and to validate the improvement of the quality of teaching and learning (Portney & Watkins, 2009).

1.4.1   Data collection and analysis

The strengths of this research lie with the longitudinal data that has now been collected and analysed over an 11 year period. The evaluation survey systems [Course Evaluation on the Web (CEW) and eVALUate] were administered to all enrolled students online. The qualitative and quantitative data were obtained via both systems through the generation of automated reports. The research undertaken using CEW during 1998-2005 captured a greater than 95 percent response rate from student evaluations in the School of Physiotherapy (Tucker, Jones, & Straker, 2008). A subsequent paper-based survey into physiotherapy student's sources of stress [called the Undergraduate Sources of Stress (USOS) questionnaire] was undertaken at Curtin and the University of Brighton. This research sought to elucidate comments made in CEW by students on their feelings of stress and staff concerns regarding the levels of stress in this student group. The USOS questionnaire was distributed and collected by two external research assistants to all students enrolled in the graduate programs. The response rate for all students surveyed using the USOS was 70% (Tucker, Jones, Mandy, & Gupta, 2006).

The eVALUate online student evaluation system, adopted by Curtin since 2005, is the university's principal system for gathering and reporting students' perceptions of their learning experiences at the level of the unit and teacher. Hence nine years of trend data are now available with over 95,000 surveys submitted annually with university-wide response rates of 43-46 percent (Tucker, 2013b). The eVALUate system and database is fully integrated with the university student management system (Student One). Prior to 2014, no other university in Australia or New Zealand had their student evaluation system integrated with their student management system hence the research undertaken in this thesis is

unique. This is a major strength of this research as student perceptions are interrogated and reported by factors such as student demographics, unit type, learning experience, year of study, student retention and progression and student grades. The focus for Curtin has been on achieving representative response rates at unit level (that is, staff can be 95% confident that the actual percentage agreement is within 10% (±) of the observed percentage agreement for the total student group enrolled in the unit). Since 2010, 61-63 percent of units with enrolment numbers greater than 100 achieved a representative response rate.

The studies within this thesis applied mixed methods with both quantitative and qualitative data in survey design and interpretation of student feedback data (Creswell, 2012; Creswell & Clark, 2011; R. B. Johnson, Onwuegbuzie, & Turner, 2007; Tashakkori & Creswell, 2007). More broadly, mixed methodology was employed during the collection, analysis and integration of quantitative and qualitative data in single studies and collectively over sequential studies. This methodology allowed the triangulation of quantitative and qualitative data. Triangulation provides a coming together of results, corroboration of results and the development of the research question by using the results of the qualitative data to inform qualitative results and vice versa (R. B. Johnson et al., 2007). This was particularly evident when qualitative analysis was undertaken to reveal the reasons for the quantitative survey item results. Mixed methods also enabled a greater depth to the research making it possible to use a variety of data sources in the studies. Quantitative methods were employed in surveys in order to collect students' perceptions about their experiences utilising closed-ended questions. Qualitative methods were employed in focus groups and surveys to collect students' views using open-ended questions allowing students to provide their views using their own words.

Five different survey instruments were used throughout this thesis, each of which used different measurement scales. Table 1 provides a summary of each survey instrument, validation method, measurement scale and method of analysis for the given data (quantitative and/or qualitative).

Table 1 Summary of Survey Instruments, Measurement Scale and Method of data analysis

Survey Instrument	Validation	Measurement scale	Data Analysis Method
CEW Unit (Module) Survey	Items adopted from the CEQ, a validated survey No additional validation undertaken	Quantitative: 5 point Likert scale (Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree) Qualitative: 4 items (Best aspects, Poorest aspects, Suggestions for improvement, Other comments)	Quantitative analysis using CEQ subscales (-100 to +100) Qualitative comments read verbatim (no further analysis)
CEW Course-to-Date Survey	Items adopted from the CEQ, a validated survey No additional validation undertaken	Quantitative: 5 point Likert scale (Strongly Agree, Agree, Neither Agree or Disagree, Disagree, Strongly Disagree) Quantitative Subscales: Good Teaching Scale, Generic Skills Scale; Overall Satisfaction Index Qualitative: 4 items (best aspects, poorest aspects, suggestions for improvement, other comments)	Quantitative analysis using CEQ subscales (-100 to +100) Qualitative comments read verbatim (no further analysis)
Undergraduate Sources of Stress (USOS) questionnaire	Developed and validated (Blackmore, Tucker & Jones, 2005)	Quantitative: 5 point Likert scale (Not at all, A little, Some-what, Quite a bit, A great deal) Quantitative Subscales: Financial, Personal, Academic	Quantitative analysis using repeated-measures ANOVA and factor analysis
eVALUate Unit Survey	Developed and validated (Oliver, Tucker, Gupta & Yeo, 2008)	Quantitative: 5 point categorical scale (Strongly Agree, Agree, Disagree, Strongly Disagree, Unable to Judge) Qualitative: 2 items (Most helpful aspects, How the unit might be improved)	Quantitative analysis using Percentage Agreement for each item. CEQuery and SPSS Text Analytics for Surveys
eVALUate Teaching Survey	Developed and validated (Tucker, Oliver & Gupta, 2012)	Quantitative: 5 point categorical scale (Strongly Agree, Agree, Disagree, Strongly Disagree, Unable to Judge) Qualitative: 2 items (The [named teacher's] teaching strengths, How the [named teacher] might improve the teaching and learning)	Quantitative analysis using Percentage Agreement for each item. Qualitative comments (no further analysis)

CEW = Course Evaluation on the Web; CEQ = Course Experience Questionnaire

For the development of survey instruments relating to the first research question and reported in two papers, Factor Analysis and the Rasch model was used to test their psychometric properties: validity, reliability and responsiveness. In addition, factor analysis [Principle Components Analysis (PCA)] and Rasch analysis tested the validity and stability of the five point categorical scale of the eVALUate surveys and the hierarchical ordering of survey items (Tennant & Conaghan, 2007). Factor analysis was undertaken to test the linear correlation of each of the items to each other. This method examines the data in a multidimensional space and configures the variables, through varimax rotation, to determine groupings of survey items according to the strength of their correlations.

During the development of survey items, face validity and content validity were ascertained during pilot testing. The importance of assessing multiple areas of validity was recognised (Onwuegbuzie, Daniel, & Collins, 2009). Rasch analysis was used to test whether all the survey items represented a single functional construct. Rasch analysis is a probabilistic modelling strategy that shows what should be expected in responses to survey items if interval scale measurement is to be achieved (Wilson, 2005). Rasch analysis allows for a unified approach to several measurement issues all of which are required for the manipulation of categorical data to create a linear measure on an interval scale. These measurement analyses are: 1) testing the internal construct validity of the scale for unidimensionality, required for a valid summed raw (ordinal) score; 2) testing the invariance of items (that is, the ratio of difficulties between any pair of items remains constant across the ability levels of respondents) required for interval-level scaling; 3) appropriate category ordering (whether or not the category ordering of polytomous items is working as expected); 4) and differential item functioning (DIF; whether bias exists for an item among subgroups in the sample). As a result of Rasch analysis, the appropriate order of the categories and rescoring can be established, the fit of items and persons to the model including strategies for improving fit (such as the deletion of items) are tested, the assumption of the local independence of items are tested (including response dependency and unidimensionality), the presence of DIF and targeting of the scale are identified, and the person separation reliability determined (Wilson, 2005).

Quantitative methods using data systematically collected and analysed from surveys provided evidence of student perceptions of improved quality in teaching and learning. Detailed descriptions of the development and validation of the unit and teaching evaluation surveys are reported in two of the research papers (Oliver et al., 2008; Tucker, Oliver, & Gupta, 2012). The same methodology was employed to validate a translated version of the unit survey to Estonian (Kumpas-Lenk et al., 2014).

This research uses two existing tools for analysing students' qualitative comments from unit surveys: the CEQuery and the IBM® SPSS® Text Analytics for Surveys 4.0. The CEQuery

software is employed to sort student comments into predetermined categories indicating the odds that the comments related to the best aspects or needs improvement survey item. The SPSS Text Analytics software is utilised to further create categories of words and themes based on the number of times they appear in the dataset (Oliver, Tucker, & Pegden, 2006; Tucker, 2013b; Tucker, Pegden, & Yorke, 2012). The employment of these tools as a method of analysing student comments is unique. Visual representations can be created by the SPSS Text Analytics software that represents the relationship between categories; this visualisation is a powerful tool for illustrating what students say (**the student voice**). Aside from research undertaken on eVALUate, there is no literature reporting the use of SPSS Text Analytics software for analysing student evaluation comments. CEQuery originated from the work of Scott (2005) who created the tool and software for the analysis of CEQ comments (Grebennikov & Shah, 2013). Modifications of the dictionary were required to ensure the software was suitable for unit analysis. Grebinnokov and Shah have recently published a case study of how one Australian university uses CEQuery to analyse graduate survey comments. Their research provides an analysis of trends in qualitative feedback over 10 years. The methodology developed in this research has now been taken up by numerous university evaluation units across Australia and New Zealand who have requested assistance to use the software.

1.4.2 Ethics approval

Before conducting each research reported within this thesis, approval was obtained from Curtin's Human Research Ethics Committee (HREC) (including OATL-1-11). In addition, ethics approval for the administration of the USOS to undergraduate students in Brighton was obtained from the University of Brighton's Ethics Committee.

Universities use a range of surveys, including student evaluation surveys to gather data about the student experience. Curtin uses student evaluation data as part of ongoing quality improvement and assurance processes and to support scholarship in teaching and learning through reflection.

The CEW system was developed and promoted by the staff and student body within the School of Physiotherapy who agreed that student feedback should be mandatory. The student body agreed to participate in CEW as a quality improvement process. This buy-in by students was achieved due to a number of features developed as part of the system: 1) complete transparency of student comments (available to all students and staff within the School) and 2) closure of the feedback loop (staff provided all students and staff with written and verbal feedback about how student feedback was used for quality improvement). Although mandatory participation of student evaluation surveys is not generally accepted in Australia or New Zealand (C. Ballantyne, 2012), Bond University currently employs a

compulsory requirement for student feedback on teaching and learning (with an option for students to opt out) for ensuring high levels of student participation (Kinash, et al., 2013b, 2013c).

At Curtin, completion of an eVALUate survey or participation in an evaluation process is taken as consent by students to the use of the data provided for quality improvement processes. For all surveys, students were assured that their feedback was anonymous and their responses would never be traced. Curtin fully assured students that their participation in the surveys had no impact on grades or progression in their course. There was no coercion by the researcher to students participating in any eVALUate survey. After students log-in to eVALUate, their responses were always reported in an aggregated format. With the unit survey, only the unit coordinator and the head of school have access to all student comments. With the teaching survey, only the teacher named on the survey has access to the student comments. Online reports were only released to staff after students' marks had been finalised (i.e. after the Board of Examiners meeting). If there is only one student enrolled in a unit, no unit report is generated (this ensures anonymity is protected). This student's feedback is reported at course level to ensure all students have a voice in this feedback process. Students are made aware of the possibility of identifying themselves through their comments (for example, "I broke my leg and the lecturer refused to give me an extension on my assignment") and are asked to carefully consider how feedback is provided.

1.5 Theoretical framework

> *"The aim of teaching is simple: it is to make student learning possible" (Ramsden, 2003, p. 7).*

This thesis focuses on the development, implementation and embedding of a student evaluation system that has brought about a significant cultural shift in teaching and learning practice at Curtin. Whilst there is a plethora of literature about students' rating systems and an abundance of research into, for example, student evaluation of teaching effectiveness, dimensions of teaching effectiveness, issues of reliability, validity, student and teacher bias and usefulness of feedback instruments (Alderman et al., 2012; Benton & Cashin, 2012; Hirschberg, Lye, Davies, & Johnston, 2011; R. P. Perry & Smart, 2007; Richardson, 2005; Spooren, 2012; Spooren, Brockx, & Mortelmans, 2013; The Univerity of British Columbia Vancouver, 2010), less attention has been directed to the purpose of student feedback for **improving teaching and learning approaches, for continuous quality improvement and for establishing a quality culture in higher education**. The critical review of student feedback for informing quality in higher education serves as the framework of this thesis. This state-of-the-art focus is on the themes developed from a series of original published

works related to the development of a school and later, a university-wide student evaluation system at Curtin. The major themes are: Theme 1) survey development, validation and practice, Theme 2), student evaluation for quality improvement, and Theme 3) student perceptions informing teaching and learning. These themes are underpinned by the principles of:

- quality improvement through student and staff self-reflection on teaching and learning,
- OFE and student-centred learning, and
- best practice in survey design.

The Butler Model of Human Action (J. Butler, Scott, & Edwards, 2002), adapted by Neil Carrington (personal communication, November 12, 2012) to describe evidence-led leadership in education provides a model that best describes those factors that influenced and guided this research (see Figure 1). The guiding factor to the development of this body of this work was the pedagogical approach underpinning the development of school and university evaluation systems. These factors were founded on **published research** and **current best practice** in Australia and internationally. The supporting theory is based on Biggs' (2003a) assumption that helping teachers improve their teaching is best achieved using reflective practice and in addition, what the student does is more important in determining what is learnt than what the teacher does (Biggs, 1999). Constructive alignment, illustrated by Biggs 3P model of student learning, where the approach to learning and teaching is outcomes focused, provided the theoretical schema for the development of eVALUate (Biggs, 1999).

Using this model of the 3Ps (presage–product–process), Biggs identifies the educational 'activity systems' critical to university learning. Presage factors are those learning environment characteristics (such as student's prior knowledge, abilities, intelligence, personality and so on) that are set prior to the learning process. At the same time, subject area, unit and course structure and learning tasks are enablers of the learning process. Process factors incorporate the approaches students adopt for their learning and those teaching and learning strategies employed to facilitate deep learning. Product factors identify the strategies students engage in when learning. The outcomes of student learning may be measured in their performance and how well they learn and achieve their graduate attributes. This model highlights that teaching-learning relationships and interactions contribute to student learning outcomes. Biggs (1999) determined that poor constructive alignment or students learning information that is not required can lead to poor quality learning. Biggs revealed that student factors, such as students' prior experiences of learning, their motivation to study and interaction with the teaching context can influence the students' perceptions of what is required for learning. Hence the 3Ps represent different learning factor

levels and those components that contribute to the students' learning outcomes. In designing the eVALUate unit survey, the achievement of learning outcomes, student motivation and their engagement with the learning process underpinned the principles upon which the survey was developed and subsequently, the wording of items. This research uses Biggs' 3P model to position student feedback in the quality improvement cycle.

The researchers' **personal beliefs/values** and subsequent **personal experience** with evaluation systems and **self-reflection**, immersion in the system, scholarly teaching, scholarship of teaching and research into student comments have guided this research and support this new approach (**action**) to student evaluation.
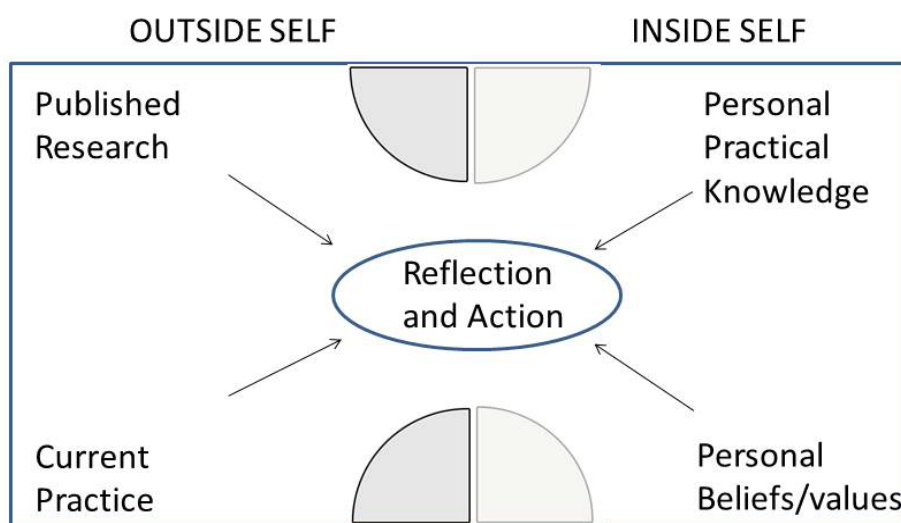
Figure 1 Butler Model of Human Action (J. Butler et al., 2002), adapted by Neil Carrington (personal communication, November 12, 2012)

This body of work led to the development of an evaluation system with a strong theoretical framework in order to enable scrutiny of the system and approach, and the development of new knowledge on students' perceptions of learning. The relationship between students' learning and their experience of the teaching and learning environment at unit level is emphasised to ensure student evaluations are not perceived as measuring students' satisfaction with teaching and/ or the teacher, but focus on learning experiences and learning outcomes (Harvey, 2003; Richardson, 2005).

1.6   The impact of this research

The work has been recognised through:

1) a commendation received by the Australian Universities Quality Audit for the *'development and implementation of the student evaluation system, eVALUate, to improve learning and teaching'*;

2) an Excellence and Innovation in Teaching Award from Curtin;

3) a Curtin Vice Chancellors Award for the Course Evaluation on the Web (CEW) Management Team; and

4) a national award from the Carrick Institute for Learning and Teaching in Higher Education: Carrick Citation for Outstanding Contributions to Student Learning for *'designing and implementing eVALUate, an online evaluation system for students and staff focusing on students' achievement of learning outcomes and closing the feedback loop'*.

The eVALUate online evaluation system has been recognised through the publication of key features on the AUQA Good Practice Database titled *eVALUate: student, employer and graduate feedback* (Australian University Quality Agency: Good Practice Database, 2009). From 2012-2014, three other Australian universities adopted eVALUate and Curtin is establishing benchmarking relationships with two of these universities using eVALUate of students' reported experiences in teaching and learning. A dual sector higher education provider is currently investigating the feasibility of implementing eVALUate in their setting. This is an exceptional achievement as, to date, there is considerable variability in student evaluation systems and instruments across the Australian higher education sector (Barrie et al., 2008). The two validation papers on eVALUate have been cited in 50 published articles. The 2013 paper on 'Student evaluation to improve the student learning experience: An Australian university case study' has been cited in six publications.

In 2013, the thesis author developed a university-wide strategic paper titled *Teaching Excellence at Curtin*. This paper provides a single set of criteria to underpin all relevant university reward and recognition processes, so that the notion of teaching excellence is clear and consistent with the University's strategic goals, and supported by a comprehensive framework which can be systemically and consistently implemented (Tucker et al., 2014). The Teaching Excellence criteria are designed to be broad and flexible, whilst providing a robust and valid definition of excellent teaching within the Curtin context. The criteria are aligned to the teaching roles within Curtin Expectations for Academic Performance (CEAP)[3] and the Curtin University Academic, Professional and General Staff Enterprise Agreement 2012-2016. Curtin's Teaching Excellence criteria mirror those developed in an Office for Learning and Teaching (OLT) Project titled the Australian University Teaching Criteria and

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[3] CEAP outlines expected performance in teaching for a Teaching and Research Academic and a Teaching Focused Academic.

Standards (AUTCS) project (Chalmers et al., 2014) and informed by criteria and evidence employed by the OLT[4], the UK Professional Standards Framework for teaching and supporting learning in higher education 2012[5], the Higher Education Academy Benchmarking Project on Recognition of Teaching in Academic Promotion Project and analysis of criteria developed in other Australian universities. The author of this thesis has been a member of the AUTCS project supporting other universities to embed the standards and criteria within their practices. The author has also worked with human resources to ensure Teaching Excellence at Curtin is now integral to evidencing good teaching and is aligned to role statements for teaching focused, clinical teaching, teaching-research and academic positions. The teaching criteria are designed to assist in clarifying expectations for individual academic staff, particularly new and early career staff (Tucker et al., 2014). The author has also led the integration of the criteria into the University's work performance review system (called iPerform) and evidence for academic promotion.

The eVALUate unit and teaching surveys provide essential sources of evidence of four of the seven criteria related to *Teaching Excellence at Curtin*. These four criteria are:

1. Design and planning of learning activities, units and courses
2. Teaching and supporting student learning
3. Assessment and giving feedback to students
4. Developing effective learning environments, student support and guidance.

Teaching Excellence at Curtin is integral to Curtin's new *Quality Framework for Teaching and Learning* which has been created to present an overall structure for quality and excellence in teaching and learning. The main elements of this Quality Framework are: the governance structure, the focus on process improvement, the articulation of relevant Australian Higher Education Standards and details the teaching and learning activities, quality indicators and measures that align with the university strategic plan.

The impact of this research has been recognised through invitations to:

- Conduct an external evaluation of the implementation of a new student survey system at three Australian universities including a 'group of eight' university in Australia in 2014.

- Provide advice as a consultant to establish cultural change in an Australian university that was embedding the eVALUate system across the university in 2014, and to participate in seminars to academics at the University.

- Partner in an Australian Government Office for Learning and Teaching Strategic Priority Commissioned Project titled *Closing the loop on feedback: Using student*

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[4] Office for Learning and Teaching, http://www.olt.gov.au/awards, accessed 5th April. 2013
[5] UK Professional Standards Framework for teaching and supporting learning in higher education 2012 http://www.heacademy.ac.uk/UKPSF

feedback to enhance student experience with the University of Newcastle, University of Western Australia and the University of Canberra.

- Partner in an Australian Government Office for Learning and Teaching Seed Project Grant ($49,000) titled *Measuring and improving student course engagement and learning success through online student evaluation systems* with Bond University, Australian Catholic University, Central Queensland University, Charles Sturt University and the University of Western Australia[6] This project was completed in 2014 (Kinash, et al., 2013a, 2013b, 2013c; 2014a, 2014b).

- Present at a Student Evaluation Symposium at Bond University in 2014.

- Present as part of an expert panel titled *How to Measure Learning and Teaching* at the Australasian Higher Education Evaluation Forum 2013: Performance indicators for universities and private providers: a time of transition, challenge and collaboration, Launceston, Tasmania (Mazzolini, Hewlett, Tucker, & Marchment, 2013).

- Present as part of an expert panel at the Australasian Higher Education Evaluation Forum 2012: Embedding an internal evaluation culture (Bowman, Aungles, & Tucker, 2012).

- Present at the Fourth National Student Engagement Conference: Enhancing retention and outcomes in a competitive environment (Nair, Tucker, & Shah, 2012).

- Submit a paper for a special issue on Online Course Evaluations: Present and Future Developments for the journal Educational Research and Evaluation (Editors: Trav Johnson, Brigham Young University, USA and Keith Morrison, Macau University of Science and Technology) (Tucker, 2013b).

- Submit a chapter for the Commission of Academic Accreditation (CAA) Quality Series Publication on Enhancing Student Feedback and Improvement Systems in Tertiary Education (Coordinating Authors: Associate Professor. Mahsood Shah, RMIT University, Melbourne, Australia and Professor. Chenicheri Sid Nair, University of Western Australia, Perth, Western Australia) (Tucker, 2013a).

- Submit a paper for a special issue on Online Student Ratings of Instruction for the journal New Directions for Teaching and Learning (Editors: Lynn Sorenson and Trav Johnson, Brigham Young University) (Tucker, Jones, Straker, et al., 2003).

The CEW papers have been cited within 62 subsequent publications. The research undertaken using the USOS has, to date, been cited in 25 published articles in journals authored by researchers from across the globe including: Sweden, United Arab Emirates, Islamabad, Hong Kong, Poland, Portugal, Norway, South Africa, Brazil, Pakistan, United States, Taiwan, Greece, United Kingdom and Germany. The survey has been administered to undergraduate students from a range of health discipline areas including: physiotherapy,

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[6] http://www.olt.gov.au/project-measuring-and-improving-student-course-engagement-and-learning-success-through-online-studen

dentistry, nursing, radiography, occupational therapy, cardiopulmonary technologists, podiatry and medical students.

1.7   Research limitations

The research undertaken as part of this thesis provides the platform for further research into the student experience of teaching and learning in higher education. The main limitation is that the sample represents the views of students from one university. It is anticipated that, as the eVALUate surveys have now been adopted by three other Australian universities and implemented at a number of universities within Estonia; a broader perspective of the student experience will be possible. The first benchmarking publication with Estonia has now been published (Kumpas-Lenk et al., 2014).

A second limitation is that the views of non-responders are not captured in student evaluation surveys (Adams & Umback, 2010; Guthrie & Johnson, 1997; Porter & Whitcomb, 2005; Sax, Shannon, & Bryant, 2003; Thorpe, 2002; Yorke, 2009). This is a known and important potential source of bias in survey research. To maximise response rates, multiple strategies are employed in the eVALUate system including a dynamic marketing strategy, regular emails, web logos, posters, a customised webpage for staff to track response rates and weekly response rate tracking for senior executives and heads of school (Tucker & Pegden, 2010, 2012). The characteristics of those students who participate in eVALUate are investigated and strategies employed for faculties to increase the participation of non-responders (Tucker & Pegden, 2012). Further details of the demographic groups that participate in eVALUate are discussed in Section 2.2.3: Appropriate reporting and use of the data.

Yorke (2009) highlights a number of limitations and issues rarely discussed in the research literature on student evaluation surveys. These limitations relate to acquiescence bias by those responding in surveys. This bias (sometimes referred to as 'yea saying') refers to the tendency for respondents to select affirming responses (Yorke, 2009). It is possible that students uncaringly select the same category within a survey instrument due to a lack of engagement with each item. Yorke (2009) suggests that this form of bias is low in populations within the higher education sector as it is more evident in people who have a low education level. However, there is some evidence that subpopulations may be more vulnerable to this form of bias (Dolnicar & Grün, 2007). Subpopulations (such as respondents from Asia) tend to select particular scale categories (this phenomenon is called 'extremeness in responding'). Dolnicar and Grün found that students from Asia tend to avoid the extremes of scales (e.g. Strongly Agree, Strongly Disagree). Research on acquiescence in student evaluations is contradictory (Richardson, 2012; Spooren et al., 2012).

Acquiescence bias and extreme responding has been found in a study of 2137 students who completed the CEQ and Revised Approaches to Studying Inventory (Richardson, 2012). In contrast, Spooren et al. (2012) found no evidence of acquiescence and proposed that it is a likely outcome of over surveying students. As Curtin has such a diverse population, further research on acquiescence bias and extreme responding for subpopulations is warranted.

As eVALUate does not contain a middle scale (such as a neutral scale of Neither agree or Disagree) indifference and ambivalence is minimised (Onwuegbuzie et al., 2009; Spooren et al., 2013). Order effects have also been minimised through the Rasch analysis undertaken as part of the eVALUate unit and teaching survey validation testing. Order effects can occur when the respondent is influenced by the order of the survey items and item content.

2.0 Chapter two - Literature review and contribution to knowledge

… quality monitoring is frequently concerned with inputs, outputs and systems, rather than processes and learning outcomes, and may have little to do with learning and teaching (Horsburgh, 1999, p.10).

This chapter covers broad topics related to quality improvement within a university and focuses on the use of student feedback about their teaching and learning experience at unit level. Whilst there are several indicators of quality in teaching and learning including peer evaluation or observation of teaching, student progression and retention rates, employer and graduate feedback and teacher self-evaluation (Drew & Klopper, 2014; Shah & Nair, 2012), this thesis focused on the role of the student voice. The literature review, addressing the first research question, provides an overview of how Australian universities have used the student voice for quality improvement of teaching and learning in higher education (Section 2.1). Best practice approaches developed as part of this thesis are presented in Section 2.2. The chapter includes a discussion of the pedagogy underpinning the student-centred approach to the eVALUate unit evaluation survey in the context of OFE (Section 2.3). The second research question is addressed by situating the scholarly contribution of the research from this thesis on students' perceptions of their teaching and learning experiences within the research literature (Section 2.4). Finally, the role of student feedback in relation to the views of academics for the purpose of quality improvement is reviewed (Section 2.5).

2.1 Using student evaluations for quality improvement

In the literature, many researchers present quality improvement as an important role of student evaluations however, there is a gap in the literature on **how** student feedback is used to inform quality teaching and learning in higher education. It has also been argued that, in order to achieve a shift in the use of student feedback from a model of quality assurance and accountability to one that focuses on enhancing student learning through quality improvement, the key lies in the evaluation of student learning outcomes (Horsburgh, 1999; Houston, 2008; Lodge & Bonsanquet, 2013; Tagg, 2010).

Most of the literature on student feedback for quality improvement focuses on survey administration and data collection processes. Within the Australian and international higher education sector, student feedback is collected using paper-based or online surveys. Much of the research on student evaluation, with a focus on teaching, has been conducted in the United States, Canada, Hongkong, Australia and Europe (Hirschberg et al., 2011) and

numerous reviews provide a synthesised and critical review of the literature (see for recent reviews: Alderman et al., 2012; Benton & Cashin, 2012; Hirschberg et al., 2011; R. P. Perry & Smart, 2007; Richardson, 2005; Spooren, 2012; Spooren et al., 2013; The Univerity of British Columbia Vancouver, 2010). In 2013, evaluation experts from eight Australian universities (including the thesis author) collaborated in investigating and reporting the practices of their universities in collecting and reporting student feedback on units and teachers (Kinash, et al., 2013a,b,c; 2014a, 2014b). Whilst some information has been reported about the students' perspectives of their experiences and engagement in higher education more broadly (Coates, 2006, 2009; Kuh, Kinzie, Schuh, & Whitt, 2005; Pascarella & Terenzini, 2005; Scott, 2005), there is scant published research on students' perceptions about their experiences of units. The emergence of online learning has provided some information about what students are reporting about their online experiences (Dobbs, Waid, & del Carmen, 2009; Leonard & Guha, 2001; Paechter, Maier, & Macher, 2010; Wyatt, 2005) however, most research focuses on the role of the teacher and on the teaching, rather than student learning. The shift from a teacher focus to a student focus, evident in the adoption by the Australian Government of the outcomes based approach to education has ensured that quality is measured in terms of student learning and outcomes, rather than teaching inputs.

Whilst student feedback can be obtained in many informal ways, formal instruments provide a mechanism for obtaining feedback from an entire student group and documenting students' experiences in a systematic way (Narasimhan, 2001). Most researchers have focused on the collection of valid information using student evaluation surveys, however there is little evidence of how higher institutions use the information once collected (Houston, 2008; Nair, Bennett, & Mertova, 2010; Nair & Bennett, 2012). Published research, primarily from the United States, Canada and Hong Kong has focused on whether student evaluations of teaching have improved teaching practice or teaching quality (Kember, Leung, & Kwan, 2002; Marsh, 1987, 2007; Murray, 2005). Most agree that, without appropriate professional development and university policies and support, surveys alone do not improve teaching practice or enhance teaching quality.

A number of validated survey instruments have been developed including; the Instructional Development and Effectiveness Assessment (Cashin & Perrin, 1978); the Student Evaluation of Education Quality (SEEQ) (Marsh, 1982); the CEQ (Ramsden, 1991); the Student Instructional Report (Centra, 1998); the Student Perceptions of Teaching Effectiveness (Burdsal & Bardo, 1986); the Students' Evaluation of Teaching Effectiveness Rating Scale (Toland & De Ayala, 2005); the Student Course Experience Questionnaire (Ginns, Prosser, & Barrie, 2007); the Teaching Proficiency Item Pool (Barnes et al., 2008); the SET37 (Mortelmans & Spooren, 2009); the Student Feedback Questionnaire (Kember et al., 2002); and the Exemplary Teacher Course Questionnaire (Kember & Leung, 2008). These instruments comprise items that are primarily focused on what the teacher does, that

is, are teacher-centred. For a review of these instruments, see Spooren and colleagues (2013). The majority of scholars have developed instruments for the purpose of creating a general score representing the effectiveness of a teacher. Kember and Leung (2009) developed a teaching and learning environment questionnaire (called the Student Engagement Questionnaire) to gather students' perceptions of their graduate capabilities and learning environment. This questionnaire was successfully used as part of a course improvement initiative in an undergraduate school.

Publications from Australia have focused on the debate of the role of national and university instruments for the purpose of measuring teaching quality and quality improvement (Barrie & Ginns, 2007; J. Blackmore, 2009). Across the Australian sector, new unit and teaching evaluation surveys continue to be developed and their validity tested without success (Denson, Loveday, & Dalton, 2010).

Horsburgh (1999) asserts that the greatest impact on student learning is the curriculum, factors that influence the curriculum and the teachers. Educators have long argued that the student should be at the centre of educational reform (Levin, 2000). Hence the role of the student voice in providing feedback on those factors that help or hinder their learning is essential in understanding the student experience. An evaluation process that has a high investment from students and teachers is more likely to add value to the quality process for the improvement of the student learning experience (Tagg, 2010). This investment was most evident in the CEW system established as part of this thesis in the School of Physiotherapy at Curtin (Tucker, Jones, Straker, et al., 2003).

Across the Australian sector, many institutions had adopted the CEQ or modified versions of it for gathering student feedback on units and teaching (Barrie & Ginns, 2007; Barrie et al., 2008). In 2002, shortly before the development of eVALUate, a scan of the Australian university sector revealed that 18 of 37 public universities used an evaluation system that contained core questions with optional additional questions. Seven Australian universities used a questionnaire constructed and based on the CEQ. At least six universities in Australia were developing new evaluation systems or were improving current systems (C. Ballantyne, 2003; D. D. Nulty, personal communication, March 9, 2004).

During this period (1999-2005), like many Australian universities, the School of Physiotherapy had also adopted the CEQ surveys for unit and course evaluation. The development and implementation of CEW in the School of Physiotherapy was undertaken as part of this thesis (Tucker, Jones, Straker, et al., 2003). Tucker et al. (2003) described the processes for collecting student feedback, reporting of data, teacher development, and quality improvement. This CEW evaluation system resulted in large improvements in course quality as measured using the CEQ (S. Jones & Tucker, 2005; S. Jones, Tucker, Straker, &

Cole, 2002a; Tucker et al., 2008). However, the usefulness of the CEQ and adapted versions in improving student learning has been challenged (Barrie & Ginns, 2007). Recent research has established that internal unit surveys do not predict graduate perceptions of their course (CEQ) and conclude the items measure different factors (Hirschberg et al., 2011).

With the exception of those publications included within this thesis, a search of the higher education research literature has, to date, failed to reveal any publication outlining **how the collection of student feedback is utilised for improving the quality of the student experience** of teaching and learning. In addition, there is no evidence of improvements in quality resulting from student evaluation processes within the research literature.

Experiences in Sweden, where student evaluations have been used since the 1960s, show that unit and teacher evaluations rarely seem to lead to major quality change in teaching, and learning processes having become ritualised. This is largely because evaluations are used primarily for monitoring purposes and are not imbedded into a quality improvement process (Nilsson & Wahlén, 2000). Repeated evaluations alone are not sufficient to drive change to curricula (Krantz-Girod et al., 2004; Kulik, 2001; Ory, 2000). Rather they provide important information for academics to identify the strengths and weaknesses within curricula. Edström (2008) reporting on course evaluation practices at a university in Stockholm, identified significant issues where the evaluation process was not connected with course development, the improvement of student learning, or was unsupported by appropriate university policies. A recent investigation of teachers' responses to student evaluations revealed that there was little evidence that student feedback led to any significant change in teaching practice (Blair & Valdez Noel, 2014).

In Australia, there is some evidence in the literature of quality processes which have been implemented. The four quadrant quality improvement cycle called ADRI (Approach, Deployment, Results and Improvement) has frequently been employed in the higher education sector (Young, McConkey, & Kirby, 2011) and is also utilised at Curtin. The ADRI cycle is also known as PIRI (Plan, Implement, Review and Improve). Within this approach, Australian universities such as the University of Newcastle, employ an holistic approach to the use of student evaluation data. At the University of Newcastle, a culture of continuous improvement is promoted using six guiding principles: consultation, communication, encouragement, celebration, integration, and innovation (Young et al., 2011). Young et al. outline the reporting of student feedback to university committees, the use of reports for discussion at course coordinator level and for identifying professional development needs for teachers at meetings with heads of schools.

At the University of Newcastle, a course improvement flowchart provides a template for the application of an action inquiry framework (Morgan, 2008). This framework ensures: that teachers are actively involved in motivating students to give feedback; that teachers close the feedback loop with students; and that teachers actively discuss their teaching and learning processes and evaluation reports with their colleagues (Morgan, 2008). At Monash, unit evaluation has been integral to the Plan-Act-Evaluate-Improve quality cycle (Nair & Wayland, 2005). The University of Sydney analysed student comments using a tool and classification scheme developed in-house. Major themes were identified and reported to Academic Board and used in faculty reviews (Symons, 2004). However, for each of these university case studies, the authors do not provide evidence of improvements in teaching and learning quality as a result of the described process. New student evaluation instruments (Teaching Feedback and Subject Evaluation Surveys) have been implemented at the University of Queensland (Timpson & Andrew, 1997) however there is no information to date on how these instruments have been employed for quality improvement.

A well designed evaluation system that collects student feedback and reports the data to relevant stakeholders does not, in itself, ensure an effective quality improvement system. The evaluation system must be embedded within a quality culture (Tucker, 2013a). Buy-in and acceptance of an evaluation system by all stakeholders is essential. A successful quality culture was evident in the CEW system, implemented at school level within Curtin (Tucker, Jones, Straker, et al., 2003). The school comprising 55 academics, 10 course managers and an annual student cohort of around 1500 students was committed to the CEW system from its inception. Students and academics were integral to the development of the system, data collection (with response rates of >95% for the surveys), and all staff were involved in professional development activities and closing the feedback loop with students. Leadership and support by senior staff and the head of school was an essential component to the success of CEW and included the public sharing of teaching practices (Tucker et al., 2008; Tucker, Jones, Straker, et al., 2003). Academic community engagement was enhanced through mentoring, the sharing of best practice teaching and learning initiatives and healthy rivalry between academic teams for the purpose of quality improvement (Tucker et al., 2008).

An evaluation culture using eVALUate has also been sought using similar strategies and principles that were established in CEW. However, a significant potential challenge to the implementation of a community culture at Curtin is its size and geographical dispersal. Curtin operates out of 16 locations (including Sydney, Malaysia, Singapore, Mauritius, Hong Kong, China) and has over 47,000 students and 3,000 staff. Tucker (2013) found that despite this challenge, a culture of quality improvement has been achieved in the development of eVALUate through leadership with a focus on communication, education and involvement of all Curtin stakeholders. The eVALUate system has been successful through the open and

transparent use of student feedback for quality improvement (Tucker, 2013a, 2013b). eVALUate has been central to the success of subsequent university-wide strategies such as curriculum renewal (called Curriculum 2010) (Oliver, Jones, Tucker, & Ferns, 2007b). A full description of the development of a student evaluation culture and the positive impact of eVALUate is reported as part of this thesis in Tucker (2013a, 2013b).

2.2   Best practice approaches for student evaluation systems

The development of the online eVALUate system was underpinned by research evidence and recognised best practice approaches established from the research literature and from those experiences obtained from the CEW system in Physiotherapy. The best practice approaches described in this section, distinguish CEW and eVALUate from other systems in Australia and New Zealand. These approaches are discussed under the following topics: 1) reflective practice on teaching and learning by staff and students (Section 2.2.1), 2) closing the feedback loop to students (Section 2.2.2), and 3) appropriate reporting and use of the data (Section 2.2.3).

2.2.1   Reflective practice

There is an emerging debate in the literature on the need to change the focus from the evaluation of teaching to the evaluation of learning (Denson et al., 2010). This change in focus is consistent with the argument that students are not simply customers of higher education (J. Jones, Gaffney-Rhys, & Jones, 2012). A key argument for using student evaluations for improving learning is that it should enhance self-reflection on learning by both teachers and students (Freeman & Dobbins, 2011). A number of researchers have identified the importance of self-reflection for teaching practice (Fazio, 2009; Feldman, 2007; Freeman & Dobbins, 2011), while others argue its importance for both teachers and students in using student evaluations for quality improvement (Freeman & Dobbins, 2011; Tucker, Jones, Straker, et al., 2003). Therefore, self-refection is considered to be important for enhancing student learning and for the development of professional practice in both students and staff (Freeman & Dobbins, 2011; Oliver-Hoyo, 2008).

Universities often employ evaluation systems without providing mechanisms for engaging staff in reflective practice or mechanisms for developing teachers. There is little evidence that evaluation systems result in an improvement in teaching and learning quality unless there are policies and procedures that facilitate change (Black, Cannon, & Hicks, 2001). An evaluation system that uses mentoring by experienced quality teachers has resulted in significant improvements in teaching and learning program quality and student satisfaction (S. Jones, Tucker, Straker, & Cole, 2002b; Tucker, Jones, Straker, et al., 2003; Tucker, Jones, Straker, & Cole, 2002). Teacher development programs are also successful in

achieving improved teaching and learning practices (Coffey & Gibbs, 2000). When student feedback is negative, academics may use defence mechanisms as a coping strategy such as denial, repression and rationalisation (Fresco & Nasser, 2001). This hampers the academic's ability to reflect on their teaching and reduces the likelihood that the quality of learning and teaching will be improved.

2.2.1.1 Students reflecting on teaching and learning

Student and staff reflections were a key feature of the evaluation system developed in the School of Physiotherapy (Tucker, Jones, Straker, et al., 2003). One year following the implementation of CEW at the School of Physiotherapy, students were surveyed to determine their views on the evaluation system. Sixty three percent of students reported that CEW encouraged them to reflect more on how they learned and how they were taught (Tucker, Jones, Straker, et al., 2003). Students reported that the CEW system resulted in collaborative approaches to learning and greater flexibility in teaching and learning. They also reported that CEW resulted in more discussion with teachers, especially about class content.

Experiences gained in CEW on self-reflection influenced the development of a self-reflective component to the eVALUate unit survey. Unique to this survey, three items ask students about what they bring to the teaching-learning partnership: their level of motivation (Archer, Cantwell, & Bourke, 1999; Bandura & Schunk, 1981; Pintrich, Brown, & Weinstein, 1994) and their engagement (Coates, 2005; Zhao & Kuh, 2004) in their learning process (Oliver et al., 2008). The items are: Item 8 *I am motivated to achieve the learning outcomes in this unit*", Item 9 "*I make best use of the learning experiences in this unit* and Item 10 *I think about how I can learn more effectively in this unit.* Tucker, Oliver and Pegden (2007) examined the different levels of motivation and engagement in student subpopulations. The findings of this study are reported in Section 2.4.2.3.

The importance of motivation and engagement is based on research in educational psychology in the field of self-regulating learning. This research has primarily been undertaken among secondary school students. To be a successful learner, a student needs more than knowledge, they need to know when and how to use cognitive strategies. Students who are motivated to learn (not just attain good grades) and believe their school work is interesting and important have been identified as being more cognitively engaged in trying to learn and comprehend the subject (Pintrich & De Groot, 1990). Hence, these students are more likely to be self-regulating. The term **self-regulated** can be used to describe learning that is guided by metacognition, strategic action (planning, monitoring, and evaluating personal progress against a standard), and motivation to learn (D. Butler & Winne, 1995; Schunk & Zimmerman, 1994; Winne & Perry, 2000). In particular, self-

regulated learners are cognisant of their academic strengths and weaknesses, and they have a range of strategies they appropriately apply in their learning. These self-regulated students believe that opportunities to take on challenging tasks, practice their learning, develop a deep understanding of subject matter, and exert effort will give rise to academic success (Boekaerts, 1999; N. E. Perry, Phillips, & Hutchinson, 2006; Pressley, 1995; Vermunt & Vermetten, 2004). In part, these characteristics may help to explain why self-regulated learners usually exhibit a high sense of self-efficacy (Pintrich, 2002). In the educational psychology literature, researchers have linked these characteristics to success in and beyond secondary school (Winne & Perry, 2000).

Self-reflection has been espoused as essential for the achievement of deep learning by students (Biggs & Tang, 2007). Learning that is designed to foster self-reflection and self-assessment results in the development and achievement of multiple graduate attributes (Nicol, 2010). Students' motivation and beliefs about learning are important factors for cognitive engagement and performance. Motivation is associated with self-regulated learning. The successful performance on a task involves a complex interplay between cognition, self-regulation, motivation and self-evaluation (Archer et al., 1999; Seifert, 2004). Motivation is an important factor for student success at university (Archer et al., 1999). Further research is recommended to determine whether students are more likely to reflect on their learning as a result of the eVALUate system.

2.2.1.1 Teachers reflecting on teaching and learning

Evaluation processes that enhance the discourse around teaching and learning between students and educators are more likely to result in improvement in the quality of teaching and learning (Freeman & Dobbins, 2011; Tucker, Jones, Straker, et al., 2003). An open and transparent evaluation system was established in the School of Physiotherapy whereby all student feedback (including comments) was accessible online to all students and staff. Teachers were encouraged to compare teaching and learning strategies with their peers, to form mentorship partners, and to actively pursue professional development. The School of Physiotherapy developed a supportive culture for teachers. Teaching and learning initiatives included monthly teaching seminars and small teaching development grants for professional development. Focus group evaluations of teachers revealed that the teachers believed that CEW had resulted in a 50 percentage increase in the time they spent on self-reflection on teaching and learning. Over a period of two years, teaching staff reported higher levels of organisational support (through CEW) for reflective practice (Tucker, Jones, Straker, et al., 2003). Additional positive effects reported by teachers using CEW included: a 25 percentage increase in job motivation, a 30 percentage increase in satisfaction with teaching despite a marked increase in teacher workloads and a 14 percentage improvement in organisational commitment (Tucker, Jones, Straker, et al., 2003).

Evidence of teacher self-reflection may be extrapolated by examining the number of staff who actively *closed the feedback loop* with students. In the School of Physiotherapy, **all** unit coordinators, course coordinators and year coordinators provided online written reports to students and staff outlining how student feedback was used to improve the student experience. In eVALUate, published unit reports comprising aggregated quantitative data (called Unit Summary Reports) are published online [see Tucker (2013) for more details]. Unit coordinators are encouraged to close the feedback loop by adding a unit coordinator response to students indicating how student feedback has been used to improve their teaching and learning experience. Each year from 2010 to 2013, around 450 to 600 units (where the unit enrolment was ≥ 20 and there were ≥ 10 student responses in eVALUate) comprised a unit coordinator response posted online. This represents approximately 22 percent of unit coordinators who are providing some written evidence of self-reflection; a proxy measure of self-reflection. It should be noted that, many teachers close the feedback loop with their students in other ways and further research is warranted to explore teacher self-reflection of student feedback using the system.

2.2.2   Closing the feedback loop to students

Responding to student feedback, is an essential task that demonstrates that appropriate action has been taken as a result of student feedback (Chen & Hoshower, 2003; Nulty, 2000; Ory, 2000; Tucker, Jones, Straker, et al., 2003). There is an expectation that as part of a quality improvement process, teachers use the feedback from students to improve their teaching (Ory, 2000). An important aspect of the feedback loop and outcome of student evaluations is that academics need to be provided with appropriate support so that teaching can be improved (R. Ballantyne, Borthwick, & Packer, 2000; Flannery, 2000; Fresco & Nasser, 2001; Tucker, Jones, Straker, et al., 2003). Unless processes are implemented within a university, teachers may disregard student feedback and make few, if any, changes to their teaching practice because of a belief that student feedback is not useful; negative attitudes toward the instrument used (validity and reliability); a lack of detail in the data to identify problems; a lack of support by teaching and learning developers; and/or, an absence of incentive for improving teaching and learning practice (Nasser & Fresko, 2002; Palmer, 2012; Wong & Moni, 2013).

Students are more likely to complete evaluation questionnaires if they see that there is action as a result of their feedback (Chen & Hoshower, 2003; Nulty, 2000; Tucker, Jones, Straker, et al., 2003). In a report conducted by the National Union of Students in the United Kingdom, only 48 percent of students indicated that they felt their feedback was acted on (National Union of Students, 2009-2010). Chen and Hoshower (2003) recommend that students be provided with written information about how student feedback has been used for

improvements in teaching and learning in order to motivate students and increase the probability that they will provide subsequent feedback. A small citation on all unit outlines about how student evaluations have helped improved teaching and learning is a practical example of how the feedback loop may be established (Chen & Hoshower, 2003). In Australia, increasingly universities are including the results of student feedback and teacher responses on unit outlines. This method has been implemented at Curtin through the Unit Outline Builder, an online tool for creating and publishing unit outlines. The Unit Outline Builder comprises a mandatory field for closing the feedback loop in a section called eVALUate.

If students are kept ignorant of the use of student evaluations, if evaluations are used for purposes students do not value or if students are not given visible results on changes made in response to their feedback, they are less likely to participate in future evaluations (Chen & Hoshower, 2003; Nair, Tucker, Ballantyne, & Collings, 2013). In one faculty at the University of Sydney, responses to major concerns expressed by student evaluations are posted on a website within one to two weeks (Hendry, Cumming, & Lyon, 2001). Watson (2003) reported alternative methods for closing the feedback loop and included the name of institutions where the practice was established. These methods included:

- leaflets (University of Central England, Birmingham; Auckland University of Technology),
- newsletters for students and staff (University of Technology, Sydney; Lincoln University, New Zealand; University of Greenwich, England),
- online feedback (University of Portsmouth; Sheffield Hallam University),
- direct communication to student representatives on various university committees (Lincoln University) and student representatives in classes (University of Central England, Birmingham),
- conferences - students invited university management to a conference to discuss results and action. At this forum, the Vice Chancellor discussed possible action with the Faculty Deans and informed the general public of actions planned (Lund University, Sweden),
- posters (University of Plymouth), and
- campus radio (Vaal Triangle Technikon in South Africa).

A study of students' perceptions of evaluations showed that almost all students believed that evaluation results should be given to the responsible head (96%) the teacher being evaluated (91%) the students (79%), the dean (71%) and vice chancellor (43%) (Spencer & Schmelkin, 2002). In the same study, students overwhelmingly indicated that they did not consult the published course and teacher evaluations mainly because they did not know they were available (Spencer & Schmelkin, 2002). The students reported that they were unsure

whether their opinions mattered because the purpose of the evaluation was unclear. In contrast, they expressed a strong desire to give feedback, express their opinions and have an influence on teaching (Spencer & Schmelkin, 2002).

The process for closing the feedback loop with students using the eVALUate online tool is unique and has been reported in detail as part of this thesis (Tucker, 2013b; Tucker & Pegden, 2010). In brief, Curtin provides feedback using various modes at multiple levels. The eVALUate website also contains a webpage titled 'Student Voice: What students are telling us and what we're doing about it'. Posted on the webpage is a general summary of the eVALUate unit survey feedback for the University overall. Deans of Teaching and Learning provide an online response to students about faculty initiatives that are implemented and planned to improve the student experience in teaching and learning. Unit Summary Reports (comprising aggregated quantitative unit data) are posted on the eVALUate website by default. Unit coordinators can close the feedback loop using the Unit Summary Report by acknowledging student feedback, assuring them that their feedback is valued and indicating how the feedback will be taken into account when the unit is next offered. Web usage statistics showed that students are increasingly viewing Unit Summary Reports. For example, in July 2010 there were 2452 reports viewed by students compared to 1736 in July 2009 (Tucker & Pegden, 2010). In 2011, web usage statistics showed that there were 16990 student hits accessing the Unit Summary Reports and in 2013, this number has increased to 48663 student hits. Web enhancements to the system have improved student access to the reports and may account for the some of the increased student views.

2.2.3   Appropriate reporting and use of the data

The disparity in views about evaluation systems by teachers lie in the apparent discrepancy in instrument design, item focus and possibly in the language used within the literature. With the exception of those universities using the eVALUate surveys, investigations of instruments in use in Australia and in those reported in the literature revealed that the surveys focus on the teaching and the inputs of the teacher (Alderman et al., 2012; Barrie et al., 2008; Benton & Cashin, 2012; Edström, 2008; R. P. Perry & Smart, 2007; Spooren, 2012). More recently, universities are revising their survey items. One university is asking students what changes would help them learn (Naidu, Kinash, & Fleming, 2014).

Instruments largely focus on *rating* aspects of the teaching experience. The term *student ratings* appears to be preferred in the American and European literature as *evaluation* implies 'worth' whereas rating implies the 'need for data interpretation' (Benton & Cashin, 2012). In contrast, this thesis author views the term *rating* to indicate an evaluation or assessment of the student experience against a known standard or quality. The notion that

evaluation surveys are used to rate teachers or their teaching is not palatable to many academics.

Whilst students are recognised to be important stakeholders (Chen & Hoshower, 2003), there is considerable diversity in teaching and learning practices in higher education and prior to 2011, teaching and learning standards (a vigorously debated topic) had not been developed in Australia (Department of Industry Innovation Science Research and Tertiary Education, 2012a). The recent Higher Education Standards Framework 2011 (Threshold Standards) specifies the role of student feedback in course quality processes but there are no criteria guiding measurements or outlining processes. Rather, the enacting of standards is at the discretion of each provider.

One of the reported criticisms of student evaluation surveys results from the method of reporting the quantitative data. As surveys often focus on the teaching and teacher inputs and student satisfaction, they are sometimes referred to as 'happy forms' (Harvey, 2003) and a measure of 'customer satisfaction' (Beecham, 2009). These negative views by academics and teachers are intensified when evaluation surveys are poorly designed, are devoid of a common understanding or consensus of what comprises good teaching (R. Johnson, 2000) or are not tested on their psychometric properties (Richardson, 2005).

Traditionally, the term *'rating' h*as been used to label student evaluation instruments and the reporting of data. For example, teachers may be rated with a numerical score [see for example experiences from Deakin University: Palmer (2012)]. Commonly in student evaluation surveys, students score items against a categorical scale (e.g. agreement, disagreement). This dichotomous data is often assigned a numerical value to produce a mean score. Whilst there is debate in the literature, the practice of using categorical scale, reforming it as a five-point scale and calculating it with a mean is considered mathematically flawed (J. Jones et al., 2012; Onwuegbuzie et al., 2009). These scores, compared across a teaching area or the university, provide a rating of whether the teacher/unit has performed below or above the mean. This practice may emphasise the achievement of a rank or score rather than achieving real and sustainable improvements in the quality of the student experience (Nair et al., 2013; Palmer, 2012). A number of researchers argue against the comparison of scores, including the comparison or mean scores on the basis that teaching is multidimensional and cannot be factored into a single score (Abrami, 2001; Boysen, Kelly, Raesly, & Casner, 2013; Franklin, 2001). More recently, an alternative methodology to Likert type scales has been proposed for discriminating student's responses to survey items related to teacher characteristics (Huybers, 2013). This method known as 'best-worst scaling' employs an experimental design methodology to generate subsets of three or more survey items. Students indicate which item is the best or worst feature of the teacher from a list of three item choices for each question. This methodology provides teachers with scores

that indicate how each attribute is rated. Huybers argues that, despite the effect this method has on increasing survey length, the scores provide more meaningful data for teacher self-reflection and improvement.

The eVALUate survey items and rating scale have undergone rigorous testing to ensure reliability and validity (face validity with Australian and international students and content validity) and has been published as part of this thesis. Representatives from university stakeholders (academics, students, academics with expertise in survey design and evaluation, and senior managers) participated in the design of the unit and teaching surveys (Oliver et al., 2008; Tucker, Oliver, et al., 2012). The research literature suggests that different stakeholder groups have different views on effective teaching and learning and face validity is optimised when the many views (particularly students' perspectives) are incorporated in the design of survey items (Spooren et al., 2013). Statistical testing showed that the rating scale was sufficiently discriminating to indicate areas of teaching and learning practice that need improvement (Oliver et al., 2008; Tucker, Oliver, et al., 2012). Quantitative data are reported as percentage Agreement, percentage Disagreement or percentage Unable to Judge for **each item** of the survey. A mid-point response was not included in the scale as it has the potential detrimental effect on score reliability as it is often interpreted in an ambiguous manner (a mid-point implies 'neutral', 'don't know', don't care' or 'no option' (Onwuegbuzie et al., 2009). A colour coded 'traffic light' method is used for course and school reports to assist heads of schools in interpreting the data. Items achieving 80 percentage agreement or higher are coded green (a very good achievement), items achieving 60-80 percentage agreement are coded orange (indicating possible room for improvement) and items achieving less than 60 percentage agreement are coded red (indicating a need for further investigation). These codes represent the de facto standards set by the university steering committee (comprising students, academics, and senior managers) who oversaw the development of eVALUate and were based on the results of the initial university-wide pilot study. This methodology ensures a university-wide standard, a weakness encountered when testing for the reliability of an evaluation survey (Morley, 2013). The coded course reports are integral to annual and comprehensive course reviews (Tucker, 2013b). Where possible (for university and faculty reports and for course review), qualitative feedback is analysed and reported along with the quantitative data and the themes identified from the student comments are tested against the quantitative results to ensure results are valid.

Teachers may have difficulty interpreting the results of student evaluations (Boysen et al., 2013). In Australia, student evaluation data are frequently presented to heads of schools and senior executive in a dashboard format. Interpretation guides enable meaningful interpretations of data, the outcome being the appropriate understanding and reporting of results (Neumann, 2000). The eVALUate reports are accessible to all stakeholders on a

'*need to know*' basis. Online access to reports and subsequent sharing of results is governed through clear policies and procedures and guidelines developed for interpreting each report and understanding any data biases (Tucker, 2013b). Statistical analysis shows that all demographic groups participate in eVALUate. Nevertheless, there is usually greater participation by female students, full-time students and students with a higher semester-weighted average. Part-time students, international students, students in older age groups and students with a higher semester weighted average are more likely to agree with the quantitative items (Oliver, Tucker, & Pegden, 2007; Pegden & Tucker, 2009, 2010, 2012; Tucker, Oliver, & Pegden, 2007). Key information about the number of student responses and response rates required to ascertain the representativeness of a sample are provided with all reports and guidelines. If the sample is representative, it means that the opinions of the sample are representative of the opinions of the whole group and that stakeholders can be 95 percent confident that the actual percent agreement is within 10% (±) of the observed percent agreement for the total student group enrolled in the unit. This reporting of data has been promoted by Nulty (2008) and is unique to eVALUate.

2.2.4   Student comments

Within the literature of evaluation practice, there are emerging discussions of the rights and responsibilities of students, academics and universities in engaging with giving and reading students' comments. Some of these issues are discussed in Publication 10. Most notably, the potential for defamation and breach of duty of care are worth further debate and research (Jones, Gaffney-Rhys, & Jones, 2012). In Australian universities, student feedback is sometimes utilised to provide evidence for cases of misconduct. See as an example the investigation of misconduct by a university lecturer by the Corruption and Crime Commission (2010). This case provided an example of the importance and obligation by universities to read student comments and act on feedback as appropriate. Within the research on student comments in Publication 3, misconduct of a lecturer was unearthed. Comments revealed that a teacher was repeatedly swearing at students in class (Oliver et al., 2007). Such cases, and a recent Australian incident of contract cheating from a company selling essays to students, has resulted in TEQSA writing to a range of higher education providers seeking assurance that appropriate policies and procedures are in place to detect plagiarism and cheating (McNeilage, 2014). As student comments provide such a rich source of feedback for quality improvement processes, including reports of such cheating practices in evaluation or other institutional surveys, there is a moral obligation for universities to ensure student comments are systematically read and acted on.

There is also an emerging field of using learning analytics in higher education including the use of student evaluation data (Gosper and Ifenthaler, 2013). Ethical challenges include informed consent, privacy and management of data (Slade & Prinsloo, 2013). The

Australasian Evaluation Society has developed guidelines for the ethical conduct of evaluations (see http://www.aes.asn). The guidelines provide principles that support the three main stages of evaluation: commissioning and preparing, conducting, and reporting as well as research. Whilst the use of anonymity and confidentiality in collecting student feedback in student evaluation surveys has been contentious, Kennedy (2008) has provided definitions that guide practice. Kennedy's definition of anonymity refers to data collected in surveys in which the respondents are de-identified and all possible identifying characteristics are separated from the publicly available data. Using this definition, and ensuring student anonymity is preserved in all evaluation reports, research on student feedback and subpopulations is therefore possible.

2.3   Pedagogy underpinning the eVALUate unit evaluation survey in the context of outcomes focused education

As discussed in chapter one, OFE is an approach to learning and teaching that uses student learning outcomes as the beginning and endpoint of the education process. It stands to reason that in order to evaluate the quality of teaching, the quality of learning and subsequent achievement of learning outcomes should be evaluated (Barrie, 2000; Carey & Gregory, 2003; Huba & Freed, 2000). The elements that characterise the elements of the learning process or experience are outlined in the '3P' model of Biggs (1989) and expanded by Prosser and Trigwell (1999). This model describes how student perceptions of their learning and teaching are systematically related to their prior experiences of teaching and learning and their actual learning and teaching context. In turn, students' perceptions of the processes inherent in their learning and teaching context affect their approaches to learning (such as deep or surface learning styles), which eventually affects the quality of their learning outcomes. Hence learning outcomes are related to teaching and learning activities, student factors and the teaching context (Biggs, 1989).

The current understanding of student-centred learning recognises that students ultimately determine the outcomes of their learning. Academics can only influence some components of the learning process. How students perceive and respond to teaching is determined by the students themselves (Barrie, 2000). An evaluation system that provides information that not only focuses on teaching behaviours but also on how students perceive and respond to such behaviours is necessary in order for academics to be able to improve and develop their teaching (Barrie, 2000; Huba & Freed, 2000). Such an evaluation instrument should ask students about what they have learnt, for example; *I have achieved the learning outcomes set for this course* or *I have developed valuable generic skills as a result of completing this course* (Barrie, 2000). A question item about learning processes might be; *I spent most of my study time trying to memorise the course material*. Items related to student perceptions of

context that are student-centred include; *the learning objectives were clear to me* and *the teaching in this course helped me to learn effectively* (Barrie, 2000).

Across the sector, there has been considerable criticism of the items contained in the CEQ instrument whilst recognising that, until 2012 there was no other validated survey providing a measure of teaching quality and overall satisfaction of a course by graduates. Moreover, the CEQ was never designed for the purpose of student evaluations of units or teachers (McInnis, Griffin, James, & Coates, 2001; Ramsden, 1999; Wilson et al., 1996). This gap in the Australian university sector resulted in the development of eVALUate, an online system for gathering and reporting student feedback on teaching and learning using a unit and teaching survey (Oliver et al., 2008; Tucker, Oliver, et al., 2012). eVALUate has been aligned with OFE (current pedagogical practice), that is, an evaluation system should be linked with the agreed upon educational and learning goals that are aligned with the university's teaching and learning mission (Cannon, 2001; Knapper, 2001; Kulik, 2001). The institutional mission, strategic objectives, educational methods, assessment, and evaluation approaches should be aligned to each other (Cannon, 2001; Knapper, 2001; Kulik, 2001). Hence, if the institution is committed strategically to student-centred learning and lifelong learning, learning and teaching methods and assessment procedures will reflect this commitment (Cannon, 2001). It is generally accepted that, academics who adopt a student-focused or **learning-centred approach** to teaching receive significantly higher student evaluations than those who have a teacher-focused or subject-centred approach (Gibbs & Coffey, 2011; Trigwell, Prosser, & Waterhouse, 1999).

The current view in higher education is that an educational focus on student learning rather than teaching is required in order to improve a student's experience in higher education and prepare graduates for success in the changing information age (Huba & Freed, 2000; McDaniel et al., 2000; Udam & Heidmets, 2013). Student related behaviours such as their active engagement in the teaching and learning process have been shown to significantly contribute to their learning (Chickering & Gamson, 1999; Kuh, Pace, & Vesper, 1997; McGowan & Graham, 2009). Students have reported improvements in their use of deep approaches to learning, their level of motivation and academic work when they take responsibility for their own learning (Dart & Clarke, 1991). Using the learning-centred paradigm Drew (2001) undertook a number of structured group discussions to explore students' perceptions of what helps them learn and develop in higher education. Students revealed there were four major factors important for their learning: self-management, motivation and needs, understanding and support. These factors where contextualised in the areas of: unit organisation, resources and facilities, assessment, learning activities and teaching. Drew argued the need to develop unit evaluation questions which asks students what helps their learning.

This shift from teacher-centred to learner-centred education requires considerable change in order to facilitate student learning (Barman, Bolander-Laksov, & Silén, 2014). This paradigm shift provided the impetus for Curtin to reframe the role of the student voice by developing surveys focused on what students believe hinder or help their learning.

Essential for the development of course outcomes is the collaborative identification of what a graduate should look like upon completion of their studies. This process, implemented and later modified for the purpose of course development and review at Curtin, requires the generation of a hierarchical framework of 'outcome statements' for each course (S. Jones & Oliver, 2008; Oliver & Ferns, 2009; Oliver, Jones, Tucker, & Ferns, 2007a). OFE requires teachers to work as teams to develop course content, identify learning outcomes, to select teaching strategies and to develop engaging learning experiences and resources at the level of the unit. The teaching team are required to design assessment approaches and criteria that validate the student's achievement of unit learning outcomes. This team approach assists in achieving a consensus on what students should be learning in a course and on communicating educational goals to other stakeholders such as accreditation bodies and employers (Daziell & Gourvenec, 2003; McDaniel et al., 2000). With this pedagogy in mind, the eVALUate unit survey was designed to ensure those teaching and learning factors considered essential for the achievement of intended unit learning outcomes were captured in the survey.

The learning-centred paradigm within the context of OFE and a knowledge of how survey items should be designed around students evaluation of their learning experience, informed the development of the eVALUate unit survey items (Oliver et al., 2008). Zerihun, Beishuizen and Van Os (2012) using these principles and being influenced by the work undertaken as part of this thesis, designed a Student Evaluation of Learning and Teaching Questionnaire (SELTQ). Zerihun and colleagues believed that certain characteristics related to the student's responsibility for learning were not addressed in the eVALUate unit survey items. The SELTQ included items such as *I know that I am responsible for my progress in the course'* and *'I was encouraged to make self-evaluation of my progress* (Zerihun, 2012; Zerihun, Beishuizen, & Van Os, 2011). The author of this thesis disputes the claims of Zerihun and colleagues that self-reflection was not included as part of the eVALUate unit survey. Item 10, *I think about how I can learn more effectively in this unit* was specifically developed to encourage students to reflect on their responsibility in learning. Nonetheless, wording of the item may be the point of difference and further research on the content validity may reveal disparities.

2.4 Student perceptions of their teaching and learning experiences

Since the implementation of CEW and eVALUate, students' perceptions of their teaching and learning experiences have been analysed and reported. This section provides a synthesis of what the student voice has revealed to date as a result of research undertaken as part of this thesis and where relevant in addition to this thesis. The research findings outlined include student feedback as it relates to evaluation practice and what student perceptions reveal about teaching and learning.

2.4.1 Evaluation practice

Research undertaken as part of this thesis on the evaluation practice was largely initiated by concerns of staff regarding the reliability of data obtained from student feedback, student anonymity and to test potential biases, that is, the discriminant and divergent validity of the survey and data. An overview of recent studies of the teacher and subject related characteristics that affect student evaluations of teaching (using teacher focused surveys) is provided by Spooren et al. (2013).

2.4.1.1 Which students give feedback?

As part of this thesis, the author undertook an analysis of unit survey responses (n = 17,855) to determine which students give feedback (Tucker, 2014). Overall there was higher participation by female students, students enrolled in external modes of study, and Australian students (i.e. those with Australian citizenship, permanent residency or New Zealand citizenship). Students aged 21-25 years were less likely to participate than students from any other age group. These findings were consistent with those of Oliver, Tucker and Pegden (2007). The eVALUate unit survey also includes two qualitative items asking students to report on the most helpful aspects of the unit and how the unit might be improved (within a character limit of 400). Chi square analysis revealed that females, older students, external students, Australian students, and fulltime students were more likely to provide written comments (Oliver, Tucker, et al., 2007; Tucker, 2014).

Staff frequently voice their belief that their eVALUate reports are negatively impacted on by a perceived over-representation of lower performing students. Pegden and Tucker (2010) conducted an investigation on student perceptions from 154,821 surveys in four semesters (semesters 1 and 2 in 2008 and 2009). Results revealed that students with higher semester weighted averages were more likely to give feedback. Students with a semester weighted average of 90 percent and higher were three times more likely to participate than students with a semester weighted average below 50 percent. The findings of this study indicate that

there is a higher participation by more academically accomplished students in unit evaluations (Pegden & Tucker, 2010).

2.4.1.2 Anonymity of comments

It is well recognised that student comments provide rich data about their teaching and learning experience (Alhija & Fresko, 2009; Chatterjee, Ghosh, & Bandyopadhyay, 2009; Harvey, 2003; Moore & Kuol, 2005; Richardson, 2005; Young et al., 2011). Jones and colleagues (2012) recommended that: 1) students are provided with a suitable code of conduct in regard to professional communication; 2) students are educated in their responsibility for giving feedback professionally; and 3) student feedback should be anonymous. Dialogue from academics about how to give feedback and how change has occurred as a result of feedback are also useful strategies for improving feedback (Svinicki, 2001; Tucker, Jones, Straker, et al., 2003). It is essential to provide education to students on how to provide effective feedback in order to decrease the possibility of offensive or useless feedback (Svinicki, 2001; Tucker, Jones, Straker, et al., 2003).

As part of this thesis the author undertook an analysis of 30,684 student comments to determine whether students were making offensive or unprofessional comments in eVALUate (Tucker, 2014). Earlier research conducted in 2006 had revealed that 0.03 percent of 29,491 student comments contained offensive language or personal insult (Oliver, Tucker, et al., 2007). In spite of these findings, staff continued to voice concerns that student anonymity provided the opportunity for students to be abusive and there was a view that there was an increase in the number of offensive comments since 2006. In 2010, a more extensive analysis of 30,684 comments was undertaken to determine: 1) whether comments were contrary to the spirit of *Curtin's Guiding Ethical Principles* in that the comment contained offensive language; was racist, sexist or personally abusive and focused on matters unrelated to teaching performance; or students made allegations of misconduct or criminal behaviour, or 2) whether comments were unprofessional. Comments were taken as unprofessional if they were considered inappropriate in a professional or workplace setting (e.g. used words such as crap or damn). Comments were categorised by the level of inappropriateness (abusive or unprofessional) and by the intended target (e.g. teacher, unit, resource). In addition, a CEQuery analysis was undertaken to determine which topics students commented about. The analysis revealed that the vast majority of comments were polite, constructive and genuinely focused on learning. The language of teaching and learning was used by many students to describe their experiences. Students commented most frequently about the methods of unit design, quality of staff, the learning resources and staff accessibility and teaching skills. Twelve comments were identified as abusive (0.04%). Five comments were directed at teachers and seven were targeted at teaching and learning experiences. Forty–four comments (0.14%) were identified as unprofessional. Of these,

seven were directed at teachers and 34 were about units (including textbooks) (Tucker, 2014).

2.4.1.3 Timing of evaluations

Some teachers believe that student feedback varies depending on when students give their feedback. Pegden and Tucker (2012) examined student feedback gathered in four different six week evaluation periods (semesters 1 and 2 in 2009 and 2010) at Curtin. Response rates and survey responses were analysed to determine when student subgroups give their feedback and whether student feedback differs according to week of survey submission. Results showed there was little variation in weekly response rates over the six week evaluation period according to student age, gender or semester weighted average. However, there were lower rates of participation in week six by students of low semester weighted average. Survey results varied slightly over the weeks and generally were lowest in weeks one and five and highest in weeks three and four. Differences in student feedback over the evaluation period were generally small and whilst there were some recurring patterns of variation in responses, there were also quite varied patterns of responses over different semesters in different weeks, particularly at the faculty level. Overall, week of survey submission (that is, timing of evaluations), did not have a consistent impact on survey results which were generally stable over time (Pegden & Tucker, 2012).

2.4.2 What student evaluations reveal about teaching and learning

Research conducted on relationships between student grades as a predictor of student learning and student evaluations show contradictory findings (W. Arthur, Tubré´, Paul, & Edens, 2003; Spooren & Mortelmans, 2006; Stapleton & Murkison, 2001; Stark-Wroblewski, Ahlering, & Brill, 2007). Previous research has focused on measuring the whole of course experience (Hirschberg et al., 2011) or students' grade expectations and their evaluations of teaching (Marsh, 2007). More recently, a focus on student perceptions of their learning as opposed to the teaching shows promise in understanding student evaluation data in relation to the student experience and their academic outcomes (Edström, 2008; Tucker, Pegden, et al., 2012). However, two issues in student evaluation data remain. First, students who achieve high grades are more likely to give feedback on their perceptions of learning and those who fail are the most underrepresented group submitting surveys (Pegden & Tucker, 2010; Sax et al., 2003; Tucker, Pegden, et al., 2012; Yorke, 2009). Second, students' perceptions of what is helping their learning may not reflect actual learning (Spooren, 2012). However, students' comments in online evaluations which are learner-focused provide a rich source of information into student learning experiences and their motivation and engagement and warrants further investigation (Tucker, Pegden, et al., 2012).

Research undertaken on what the student voice has revealed has been undertaken as a result of concerns raised by staff (in the case of CEW) or findings revealed in biannual university reports of the eVALUate unit survey. To date, there has been no published research of the data gathered from the eVALUate teaching survey however; this research is planned in the future.

2.4.2.1 Academic stress

The researcher's experience using the Student Evaluation of Educational Quality survey (Marsh, 1982), CEW and eVALUate has revealed that in some cases, further investigations are needed to expose factors that affect the student or teacher experience. Issues may be revealed through student comments and further investigations may unearth atypical teaching and learning concerns. This situation arose in the School of Physiotherapy CEW system where further research was undertaken as part of this thesis to explain students' comments about their feelings of stress (Tucker et al., 2006). A questionnaire called the USOS was developed and validated specifically for two collaborative investigations between Western Australian students and those in the United Kingdom (A. M. Blackmore, Tucker, & Jones, 2005). The USOS contained 18 items in three subscales (financial, personal, academic) and one additional item about overall level of stress during the course. Students were asked, *"reflect on your years as a student in physiotherapy (podiatry). To what extent was each of the following a source of stress to you during those years"* using a 0-4 scale of 'not at all' to 'a great deal.'

The research undertaken as part of this thesis of physiotherapy students revealed that academic concerns were rated highest by all students particularly the amount to learn, time demands of the course and conflict with other activities. The course was perceived to be more difficult than expected. There was no correlation between any stress subscale and the number of hours a student worked in paid employment (Tucker et al., 2006; Tucker, Jones, Wilson, & Blackmore, 2004). The findings were discussed in light of learning activities within the curriculum and the demographic profile of the student groups. The authors recommended reducing the amount of content within the curriculum and a revision of the learning outcomes to reduce students' academic stress. A subsequent investigation of 191 undergraduate podiatry students revealed similar findings to those of Tucker et al. (2006). Academic stress was rated highest for all students and in particular when first year students were learning on clinical placements (Mandy, Tucker, & Tinley, 2006).

2.4.2.2 What different student subgroups report?

Differences in student evaluation data from male and female students are widely reported in the research literature. Pegden and Tucker (2009) undertook a comprehensive analysis of

student evaluation data from four large undergraduate Curtin courses to examine differences reported between male and female students over time (a period of 4 years), by year of study and between courses. Consistent with the research literature, the findings of this study revealed that female students report greater satisfaction with the quality of the unit teaching and learning experiences. However, across the university, the differences between females and males in their perceptions declined each year as survey participation increased. Male students reported lower satisfaction in their second year of study. Most notably, female students reported higher percentage agreement with those items related to student engagement and feedback. Differences in perceptions were less clear when analysed at course level which were largely explained by the nature of the course, whether there was a majority of female or male students in the course and by the characteristics of those enrolling in the course (Pegden & Tucker, 2009).

Tucker (2014) found that some of the higher participating student subgroups also tend to agree more with the items from the eVALUate unit survey. This study of unit evaluations (n = 17,855) revealed that females were more likely to agree with most items, as did part-time students, international students, students in older age groups, external students and students with a higher semester weighted average. These findings were consistent with the findings of an earlier study of 25,090 unit evaluations (Oliver, Tucker, et al., 2007). Whilst these differences between subgroups were statistically significant, they were very small (1-2%).

The results of a second larger investigation of student perceptions from 154,821 surveys in four semesters (semesters 1 and 2 in 2008 and 2009) revealed that students with a higher semester weighted average were more likely to agree with the survey items. This was particularly evident in survey items related to the student's own engagement and motivation, as well as in the overall satisfaction item (Pegden & Tucker, 2010). The findings of this study suggested that a higher participation by more academically accomplished and motivated students skewed results in a positive manner when aggregated university data were reported (Pegden & Tucker, 2010).

2.4.2.3 Student motivation

Tucker et al. (2007) undertook further research to determine whether student subgroups report different percentage agreement with their motivation and engagement and to reveal what students say in their qualitative feedback. The analysis of 50,481 unit survey responses from 2006 showed that females reported significantly higher motivation and engagement than males as did part-time students, international students, students in older age groups, external students and students with a higher semester weighted average. Students in health and humanities reported higher motivation and engagement than students in business and

science and engineering. Student comments focused on both extrinsic and intrinsic factors that motivated and engaged their learning. In particular, students commented very strongly that teaching staff can make a unit interesting, even when the subject matter is perceived as uninteresting. Students also commented that they really appreciate teachers' efforts to make the subject interesting (Tucker et al., 2007).

A follow up study investigated students report of: different levels of motivation across units within a study period; the characteristics of the students who consistently report different levels of agreement with Item 8 (*I am motivated to achieve the learning outcomes in this unit*); and the factors that influence their motivation to learn (Tucker & Pegden, 2008). The responses to Item 8 were analysed for students enrolled in at least 3 units in a semester (n=4,983). Of this group of students, the majority (76.7%) reported different levels of motivation for each of their units. For those that reported the same level of motivation for all their units, the majority indicated they were motivated learners. Only 52 students (1.0%) disagreed or strongly disagreed that they were motivated to achieve the learning outcomes for each unit in which they were enrolled. Australian female students were more likely to strongly agree that they were motivated. Students that were more likely to either disagree or strongly disagree that they were motivated were Australian, male, studying in science and engineering and were aged 25 years or younger. These students commented that they needed more information and help in achieving their learning outcomes, and on the unit assessments and poor organisation of their units. There was no relationship between level of disagreement with motivation and semester weighted average. Many of these students left their course (Tucker & Pegden, 2008).

As part of this thesis, Tucker, Pegden and Yorke (2012) undertook an analysis of student feedback in a large Bachelor course (n=2,929). Results revealed that where students reported the highest overall satisfaction with the unit, they also reported the highest student motivation and engagement. Student motivation and engagement was not related to the unit pass rate. For example, in one unit which had the highest pass rate, students reported low motivation and engagement. Understanding the factors that motivate students to learn will assist universities to develop effective strategies for improving their experience and ultimately in improving student retention (Tucker, Pegden, et al., 2012).

2.4.2.4 Student perceptions and student outcomes

As part of this thesis, research was undertaken to determine whether there was a relationship between student perceptions of their learning and academic outcomes: grades and student retention (Tucker, Pegden, et al., 2012). Whilst it is acknowledged that academic outcomes present a narrow perspective of student outcomes, scholars continue to debate the different measures used across professions and fields of education, including

such measures as graduation rates, assessment results and discipline specific course outcomes (Caspersen, Frølich, Karlsen, & Aamodt, 2014; El-Khawas, 2014). To date, there has been little research on the relationship between student evaluation data and measures of learning outcomes. Whilst there is evidence that students perceive that learning outcomes are useful in supporting their learning (Brooks, Dobbins, Scott, Rawlinson, & Norman, 2014) the studies on small student numbers have mainly focused on the evaluation of teaching rather than students' perceptions of their learning. Tucker and colleagues (2012) undertook an analysis of student evaluation data (qualitative and quantitative), unit grades and course retention data. The students included in this study were enrolled fulltime in seven core units in the first year of a bachelor course (n=2,920). Students were enrolled in eight campuses from four countries. Results showed that males aged 21-25 years and enrolled externally (primarily from two offshore campuses) were more likely to fail the units. Units with higher pass rates were not always the units with the greatest percentage of high achieving students (distinctions and high distinctions). For some units, students who had received a bare pass grade reported higher satisfaction than those who attained a higher grade. In one particular unit, where the least number of students had failed, course retention was the lowest (that is, students were less likely to be enrolled in the course one year later). Grades achieved were not always a determinant of course retention; one unit associated with the greatest number of fails, was associated with a high retention rate in the course. Interrogation of student comments revealed that most of these findings could be explained by student dissatisfaction with the learning outcomes of the unit, the assessment pattern and assessment type. Students who failed commented on the tuition pattern (length of class), learning resources and technologies and quality of the teaching staff (Tucker, Pegden, et al., 2012). These findings revealed the different experiences of students within a course. Analysis of student perceptions and their academic outcomes provides rich information for course development and review and for understanding students' experiences in a changing higher education context. This research is the first reported investigation of student perceptions and outcomes and it is anticipated that such analytics will become commonplace in the future.

2.4.2.5 Student perceptions of teaching in online learning

Curtin is a significant shareholder provider for Open Universities Australia, the largest Australian university provider of online learning. As part of this thesis, research was undertaken to examine those factors revealed as hindering student learning when studying fully online (Tucker, Halloran, & Price, 2013). This study of 11,501 evaluation surveys revealed that students overwhelmingly reported very high levels of satisfaction with their experience in online learning. However, these students reported lower levels of satisfaction in relation to the quality of teaching and feedback on learning than has been reported by other Curtin students. Students studying online commented that the online interactions with the teacher were most important to their learning. The perceived quality of teaching was

related to the amount and quality of the teacher-student interaction. They also commented that, where feedback on their learning and assessments was not provided by their teachers, this hindered their learning (Tucker et al., 2013). A further analysis of the same student cohort was undertaken to uncover students' perceptions of those factors that needed improvement related to assessment and feedback on learning (Halloran, Price, Tucker, & Davis, 2014). Student comments revealed their sense of frustration related to poor assessment design, with the timing of their assessments and feedback and how these factors implicitly increased their workload and stress. Students commented that the quality of information about assessments was unclear and confusing. This feedback from students will be integral to the future provision of professional development and support for teachers and appropriate assessment and curriculum design as Curtin, under its new strategic plan, increases its online offerings.

2.5   Academics views of the role of student feedback

The debate on fitness for purpose in the use of surveys of student perceptions of their teaching and learning has been the focus of much debate and controversy (Davies, Hirschberg, Lye, & Johnston, 2010). This debate is largely a result of the way student evaluations are used to: 1) improve teaching quality, 2) inform tenure and promotion decisions and 3) to measure teaching quality for institutional quality assurance purposes. Two additional purposes for student evaluation surveys have been proposed: 1) for students to use in the selection of units of student and teachers and 2) for research on teaching and learning (Marsh, 2007).

Evaluation systems are considered by most authors to be an essential component of teaching and learning practice (Knapper, 2001). There is a widespread view that evaluation of teaching and learning leads to improvements in the teaching and learning experience for students and staff, particularly when professional development is provided (Coffey & Gibbs, 2000; Gibbs & Coffey, 2011). However, teachers' perceptions of the context of evaluations and their role determine the nature and degree to which they engage in the process of self-reflection and quality improvement (Edström, 2008). There is a view that only good teachers engage in seeking professional development (Harris and Webb, 2010) and little is known about their engagement with student feedback. Despite the longstanding practice of student evaluations, academics continue to express negative views and anxiety when universities transition to an online system. In a recent study, academics reported a perceived lack of control of the process, a concern over the effort to maintain useful response rates and a concern over the use of results for tenure and promotion (Rienties, 2014). A recent survey of 1,065 teaching staff (44% response rate) across three higher education institutions in New Zealand revealed that 73 percentage of teachers thought that the collection of student

feedback was worthwhile. However, only 19 percent identified benefits in informing teacher and/or unit development and 19 percent believed the feedback identified students' learning needs (Stein et al., 2012; Stein et al., 2013). These teachers reported they perceived the following limitations with current evaluation systems: shortcomings in the evaluation/appraisal system (14%); the quality of the student responses (10%); and the use of the same instrument for quality assurance and developmental purposes (7%). In a study of six early career academics, teaching in small classes and who demonstrated high levels of reflective practice on student feedback, an improvement on teaching evaluation results has been reported (Winchester & Winchester, 2014). Clinical teachers (n = 37) from a medical program reported the usefulness of student evaluations for teaching improvement, voicing student concerns and developing confidence in their teaching (Wong & Moni, 2013).

A recent project funded by the Office for Learning and Teaching in Australia, investigated the approaches and strategies used to measure and improve student engagement and learning success through the use of online evaluation systems at six Australian Universities (Kinash et al., 2015). Focus group surveys with students, academics, professional staff and the senior executive of these six universities revealed a diversity of opinions about online systems, processes, surveys and use for quality improvement. There was a diversity of opinion about the quality and detail contained within student comments for use in quality improvement (Kinash et al., 2015). A culture of quality improvement by all teachers using student feedback provides evidence that teaching and learning experiences for students can occur (Tucker, 2013a; Tucker et al., 2008). Further research on the views of teaching academics on the value of student feedback and their use of the student voice for quality improvement is warranted.

3.0   Chapter three - Discussion and thematic overview of published work

The research critically investigated the role of student feedback using online evaluation surveys to bring about a significant cultural shift in teaching and learning practice at Curtin University. The analysis of the literature showed that currently, the eVALUate survey is the only validated survey implemented in Australia. In addition, with the exception of a survey recently developed by Zerihun, Beishuizen and Van Os (2011, 2012), there has been no published evaluation system that aims to gather students' perceptions about their achievement of unit learning outcomes. This focus on the outcomes of learning, rather than on teacher-centred activities has been advocated by researchers in quality teaching and learning and is a key Australian federal government initiative. An important and unique feature of eVALUate is the inclusion of items that ask students to reflect on what they bring to the teaching-learning partnership.

As the eVALUate system is integrated with the university's student management system, research into student feedback on their experience of teaching and learning has been possible including investigations on: which student groups participate in giving feedback, what students say, differences in perceptions of student subgroups and student experiences in relation to different teaching and learning practices and student outcomes (including student grades and course retention). The research undertaken as part of this thesis utilises qualitative research tools (CEQuery and SPSS Text Analytics for Surveys) that have not previously been used for analysing student evaluation comments. These tools have enabled the analysis of student comments and revealed students' perceptions of teaching and learning not previously reported. This research has been timely for the following reasons.

- The federal government has highlighted the need for higher education providers to focus on measuring and monitoring student engagement with a focus on student's achievement of learning outcomes.
- The plethora of research published on student evaluation systems has unsuccessfully focused on student learning. An evaluation tool that asks students to report their perceptions on what is helping or hindering their learning will enable a shift in teacher and student reflection on teaching and learning.
- It is anticipated that the federal government will expect universities to undertake benchmarking using quality indicators such as student evaluations. This will now be possible as eVALUate has been taken up by three other Australian universities.
- New pedagogies in teaching and learning are being investigated within the new digital age where technology enhanced learning is rapidly growing.

- The role of universities in providing higher education is being reconsidered along with the identity of students as learners. The student is a key stakeholder in higher education and their voice should be heard.

The research outputs from this thesis are structured into three main themes: Theme 1) survey development, validation and practice, Theme 2) student evaluation for quality improvement, and Theme 3) students' perceptions informing teaching and learning. This research is based on a comprehensive analysis of the literature, an analysis of best practice in student evaluation in Australia and globally, personal beliefs and values established whilst learning and teaching in the higher education sector and personal experiences with evaluation systems. Self-reflection and expertise in the field have guided this research and supported the approaches developed and analysis of the student voice as part of the evaluation system. Both quantitative and qualitative data have informed the findings.

The following research questions were used to guide this research.

1. **What are the key factors underpinning the effective use of student feedback for quality improvement of teaching and learning in higher education?**
2. **What do student perceptions of their teaching and learning experience reveal about the quality of their learning in higher education?**

The first research question was answered by research conducted under the first two themes and the second research question was answered by research conducted under the third theme. Figure 2 shows how the ten publications are related to the research themes and their contribution to the research questions. Seven publications are peer-reviewed papers in journals, two peer-reviewed papers are Research and Development in Higher Education conference publications and one paper is a peer reviewed publication of the United Arab Emirates CAA of the Ministry of Higher Education and Scientific Research. The CAA is responsible for the quality of higher education (including accreditation of providers and programs and academic standards) ensuring consistency with international standards. Three of the seven journal papers are publications arising from an invitation by the journal editor(s). In addition, there are five peer-reviewed publications in journals and seven peer reviewed full conference papers that are relevant to the thesis.

The discussion on each paper is structured around the three themes to provide a logical sequence. In Figure 2, the connecting arrows indicate that the research conducted as part of Theme 1 provides the foundation for research undertaken in Theme 2 and 3. Whilst survey development and validation was essential for research conducted under Themes 2 and 3, it is important to bear in mind that personal beliefs and practical knowledge developed within Theme 2 informed those survey practices developed as part of Theme 1 and was also

essential to the research conducted in Theme 3. The publications are aligned with the theoretical framework whereby the published research, current best practice, personal beliefs and practical knowledge have guided the research and supported the development of a new student evaluation system for capturing the student voice for quality improvement.
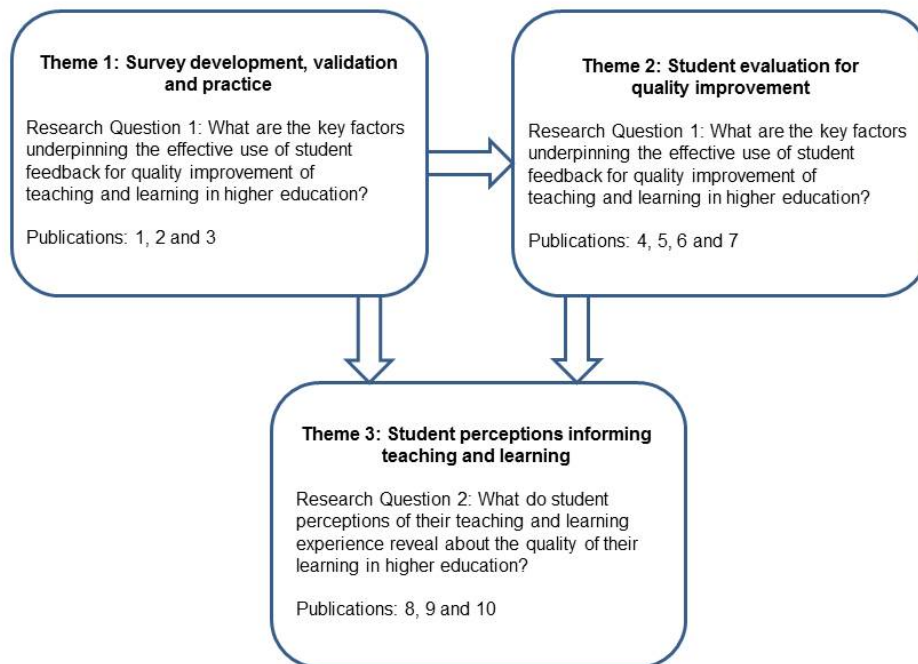
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┌─────────────────────────────────┐        ┌─────────────────────────────────┐
│ Theme 1: Survey development,    │        │ Theme 2: Student evaluation for │
│        validation               │───────▶│       quality improvement       │
│        and practice             │        │                                 │
│                                 │        │                                 │
│ Research Question 1: What are   │        │ Research Question 1: What are   │
│ the key factors                 │        │ the key factors                 │
│ underpinning the effective use  │        │ underpinning the effective use  │
│ of student                      │        │ of student                      │
│ feedback for quality improvement│        │ feedback for quality improvement│
│ of                              │        │ of                              │
│ teaching and learning in higher │        │ teaching and learning in higher │
│ education?                      │        │ education?                      │
│                                 │        │                                 │
│ Publications: 1, 2 and 3        │        │ Publications: 4, 5, 6 and 7     │
└─────────────────────────────────┘        └─────────────────────────────────┘
              │                                          │
              └────────────┐          ┌─────────────────┘
                           ▼          ▼
           ┌─────────────────────────────────────────┐
           │ Theme 3: Student perceptions informing   │
           │          teaching and learning           │
           │                                          │
           │ Research Question 2: What do student     │
           │ perceptions of their teaching and        │
           │ learning                                 │
           │ experience reveal about the quality of   │
           │ their                                    │
           │ learning in higher education?            │
           │                                          │
           │ Publications: 8, 9 and 10                │
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Figure 2 Thematic overview of research publications and their contribution to the research questions

Unlike most previous research undertaken on student evaluation systems, this thesis extended beyond the development and validation of a survey. The research critically analysed the use of student evaluations for quality improvement and provided a unique insight into the perceptions of students in their achievement of learning. However, this research would not have been possible without the development of valid unit and teaching surveys, a critical element to using the student voice for quality improvement and to undertaking research on what students reveal about quality teaching and learning. Having valid surveys where student feedback is anonymous means stakeholders, particularly academics, are more likely to be confident in the data obtained from the surveys and are more likely to buy-in to the culture of quality improvement using student evaluations. This research has been conducted using an evidence based approach. Valid surveys have been developed and implemented and data has been analysed to unearth student perceptions related to the research questions.

Theme 1: Survey development, validation and practice

Publication 1:   eVALUate: an evaluation instrument for measuring students' perceptions of their engagement and learning outcomes

Prior to 2012, no student evaluation system had been developed or validated to gather students' perceptions of their achievement of learning outcomes. Survey instruments have focused on teacher-centred learning and teaching activities and are often used to measure teaching practices. The aim of the paper was to report the development, validation and testing of the eVALUate unit survey which is still the only validated survey implemented in Australia. The survey was developed in 2003 using an OFE paradigm and aligned with the university's teaching and learning goals. The instrument is unique as it asks students to report their perceptions of what helps them to learn, what they bring to the teaching–learning partnership (their motivation and engagement) and their overall satisfaction with the unit.

The paper outlined the surveys previously used in Curtin (and many other Australian universities), outlined the drivers for change and explained the development of the instrument using the OFE paradigm. Factor analysis and Rasch analysis were used to validate and test the rating scales and survey items following each pilot test. Testing of the final pilot study was based on 17,700 survey responses by 6,036 students. This paper was published in *Assessment and Evaluation in Higher Education* in 2008.

Based on the factor analysis and Rasch analysis, the key findings of this study were that:
1. There was an excellent data-to-model fit for the four-point form of the rating scale, chosen for the final version of the unit survey
2. The survey instrument was multi-dimensional in nature
3. Each item in the survey evaluated a different aspect of teaching and learning
4. The items did not measure a single trait therefore each item is to be reported separately and not summed or aggregated.

The unit evaluation survey, developed on the OFE paradigm and aligned with the university's teaching and learning goals, is a unique and simple survey which reports students' perceptions of what helps their achievement of learning outcomes, students' level of motivation and engagement and the overall satisfaction with the unit. Results are valid when reported as percentage agreement with each of the items and these results are able to discriminate between units.

Publication 1 is an essential contribution to the first research question: a valid and reliable unit evaluation survey enables the collection and reporting of students' perceptions of their learning. Asking students to report on those factors that help and hinder their achievement

of learning outcomes ensures that their voice can be used for improving learning and teaching.

Publication 2: Validating a teaching survey which drives increased response rates in a unit survey

At the same time the eVALUate unit survey was created, a complementary teaching survey comprising seven quantitative items and two qualitative items was developed. The survey was designed so that it would be suitable for multiple teaching and learning contexts and practices, particularly where units had multiple tutors teaching in multiple locations both onshore and offshore. Within the online system, students can only give feedback on teachers once they have completed the unit survey. The aims of this paper were to: 1) report the development, validation and testing of the eVALUate teaching survey and 2) determine the effect that appending the teaching survey to the unit survey had on response rates.

The paper provides an analysis of those criteria reported in the research that have been used to determine teaching quality. The development of the instrument and validation and testing of the rating scales and survey items (using factor analysis and Rasch analysis) following each pilot test were described. Testing of the final pilot study was based on 14,989 survey responses. Quantitative methods were used to test the impact of the teaching survey on unit survey response rates. This paper was published in *Teaching in Higher Education* in 2012*.*

Based on the factor analysis and Rasch analysis, the key findings of this study were that:
1. There was an excellent data-to-model fit for the four-point form of the rating scale, chosen for the final version of the teaching survey
2. Each item in the survey evaluated a different teaching characteristic
3. The items did not measure a single trait therefore each item is to be reported separately and not summed or aggregated.

This simple survey reports students' agreement with items related to teacher characteristics. The teaching evaluation survey items are consistent with those teacher dimensions demonstrated to increase student learning outcomes. The items of the eVALUate teaching survey are consistent with those recently identified as the characteristics of effective teachers assuring content-related validity of this survey (Spooren et al., 2013). Results are valid when reported as percentage agreement with each of the items and these results are able to discriminate between teachers. The increased usage by teachers of the teaching evaluation survey (which is appended to the unit survey) has resulted in the increased response rates of unit surveys university-wide. This response rate is a key performance measure for many institutions.

Publication 2 is an essential contribution to the first research question: a valid and reliable teaching evaluation survey enables the collection and reporting of students' perceptions of teaching practice that is used for individual improvement and for identification of professional development needs. These factors ensure the student voice can be used for improving learning and teaching.

Publication 3:   Student evaluation surveys: anonymous comments that offend or are unprofessional

Student comments are a source of anxiety for some academics who perceive that anonymous systems provide students with a mechanism for providing unjustified and at times cruel comments in evaluation surveys. There is a widespread belief by academics that student anonymity within online student evaluation systems supports unacceptable student communication behaviours. This belief results in academics mistrusting the student voice and disengagement with student evaluation systems. This paper reports on the findings of an investigation of 30,684 comments taken from 17,855 surveys that aimed to provide an insight into the extent to which student comments are offensive and unprofessional. All de-identified comments were read by an individual randomly appointed for the research. The student comments were identified as inappropriate, were categorised as being either abusive or unprofessional and the intended target (that is, teacher, unit, resource) was identified.

This analysis and categorisation of student comments has not been previously reported in the research literature. The findings, consistent with an earlier study, indicate that very small numbers of comments are abusive (0.04% of the sample) and less than half of these comments are directed at the teacher. Most of the comments related to the students' teaching and learning experiences. Student comments were identified as unprofessional in 0.14 percent of the sample, most of which were comments about the unit. A number of strategies which had been developed to educate students on giving feedback in student evaluation surveys are reported in this paper. The practices that were employed to educate students on giving appropriate feedback and manage the publication of student comments are described. This paper was published in *Higher Education* in 2014.

Publication 3 provides reassurance to academics that the vast majority of students do not abuse the privilege of giving anonymous feedback. Student anonymity and the reassurance that very few students use the surveys as a vehicle to offend and be unprofessional is essential for establishing a community of trust and commitment by students and staff in the evaluation system. Trust and commitment in the system and data are essential for the practice of self-reflection by students and academics. The paper argues that the most

feasible process for minimising offensive and unprofessional comments lies with student education in communicating professionally. In addition, it is essential to provide academics with the appropriate support to interpret evaluation reports so that isolated comments do not detract from the rich and valuable feedback provided by students on those factors that help or hinder their learning.

Theme 2: Student evaluation for quality improvement

Publication 4: Course evaluation on the Web: facilitating student and teacher refection to improve learning

This paper provides an overview of a school based, online student evaluation system (called CEW). It provides an overview of unit evaluation within a '*Learning-community model.*' The focus of this paper is the CEW process which was developed for quality improvement of teaching and learning. Student and staff refection and professional development through mentoring were important features of CEW. All student feedback (qualitative and quantitative) was available to the school community and staff provided reports on how the student feedback was used to improve their experience, thereby closing the feedback loop. The aim of this paper was to describe the CEW process and to determine the benefits for students, staff (including teachers and managers within the school) and the course. Students and staff were surveyed using validated surveys on organisational culture and support and course benefits were tracked using the CEQ. Mixed methods were utilised to investigate the benefits of CEW and the analysis was based on data collected from 50 teachers, 10 course managers and over 500 students over a three year period.

The paper reported a system considered as best practice in 2003. The authors were invited to share the experiences of CEW though publication in a journal series on 'Online Student Ratings of Instruction' in *New Directions for Teaching and Learning*, 2003.

This study demonstrated that an online evaluation system (CEW) is an effective tool for enhancing student and staff reflection on teaching and learning when a learning community comprising students, teachers, coordinators and senior managers is committed to continuous monitoring and quality improvement. This online evaluation system was an effective mechanism for quality improvement resulting in improved student satisfaction with their course. The success of the system was dependent on: 1) the support given to the teaching academics; 2) the extent to which students participated in giving feedback on teaching and learning and felt ownership of the process; and 3) the commitment of all students and staff in the School.

Publication 4 is an essential contribution to the second research question. The publication provides evidence that an effective student evaluation system can be employed for quality improvement of teaching and learning in higher education when a number of conditions are met. These conditions include a system that:

- encourages self-reflection and communication;
- provides timely reports capturing the student voice;
- provides a supportive environment for academics;
- supports professional development and mentoring for academics;
- includes a formal mechanism for closing the feedback for students;
- provides evidence of quality improvement for students and staff; and
- comprise an effective learning community model.

This school based student evaluation system incorporated current best practice in using student feedback for quality improvement and informed the development of Curtin's university-wide student evaluation system.

Publication 5: Online student evaluation improves course experience questionnaire results in a physiotherapy program

Within Australia, there had been considerable debate on the usefulness of the CEQ for gathering students' perceptions at unit level and whether universities have been able to change graduate perceptions using quality improvement strategies. This paper reports the use of CEW in quality improvement of teaching and learning within a school and the improvements gained in CEQ. Those features and strategies that were integral to the success of CEW were detailed. The aim of this research was to report the implementation of CEW and subsequent changes in graduate perceptions of the quality of their experience as measured by CEQ. This research was the first in two publications (both outputs from this thesis) that have provided evidence of successful improvements in students' experiences linked to a system of gathering student feedback at unit level. The research reported in this publication is based on data collected over 4 years from 1,447 students, 55 academics and 10 course managers. Mixed methods were utilised to investigate the benefits of CEW and included: a previously validated Academic Climate Survey; student and staff focus groups and quantitative methods.

The paper provided evidence of the impact of a quality improvement process embedded within a school that gathered students' perceptions of their teaching and learning experience using an online student evaluation system. This paper was published in *Higher Education Research and Development* in 2008.

This study showed that an online evaluation system (CEW) (described in Publication 4) resulted in improvements in the teaching and learning experiences of physiotherapy students and the perceptions of the quality of the course by physiotherapy graduates. The success of the online student evaluation system (CEW) was attributed to:

- student and staff self-reflection;
- open and transparent culture of closing the feedback loop to students;
- staff accountability and support with the public sharing of all student comments and staff reflections;
- open and transparent culture of dialogue between teachers and students about teaching and learning;
- a school approach to professional development for academics; and
- a commitment and culture of quality improvement of teaching and course curriculum by the school community.

The teaching and learning strategies and curriculum changes that were implemented as a result of student feedback, academic professional development and sharing of best practice are described.

Publication 5, an essential contribution to the second research question, provides evidence that an effective school based student evaluation system and quality improvement process improves the quality of the student experience and graduate perceptions of their course. The successful practices developed in CEW were incorporated into Curtin's university-wide student evaluation system (Publication 6 and 7).

Publication 6:   Student evaluation to improve the student learning experience: an Australian university case study

Although universities have been collecting student evaluation data for decades, there is a lack of research on the impact of student evaluation on quality in teaching and learning. There is limited information in the research literature detailing how student feedback is reported, analysed and subsequently used to improve the university student experience. The aim of this paper was to share the experience of using eVALUate (using validated survey instruments) for improving the university student learning experience. The eVALUate system had already been recognised as best practice by the Australian Universities Quality Agency and had received a national teaching award. The system was developed on the conditions and learnings of the CEW system (Publications 4 and 5). The paper outlined those factors, including regulatory, that impacted on university evaluation processes and the role of student evaluations within the Australian context. The paper detailed precisely how the eVALUate system captures student feedback, what reports are generated and how teachers can close the feedback loop with students. Those features that contribute to

student and staff refection on teaching and learning (previously developed in CEW) were highlighted. The paper described how qualitative and quantitative feedback was analysed and used to improve the student experience; including through professional development, university-wide projects and comprehensive course review. Mixed methods were utilised to investigate the change in student experiences in teaching and learning. Evidence of improvements in teaching and learning quality over a period of six years was provided. The paper concluded with a commentary of key issues and future challenges for universities in using student evaluations for improving the student experience and where applicable, solutions were proposed.

The paper provided evidence in support of the second research question, using quantitative measures, of the impact of a university-wide quality improvement process that gathered students' perceptions of their teaching and learning experience using an online student evaluation system. The paper reported a system considered as current best practice. The author was invited to publish this paper for a special issue on Online Course Evaluations: Present and Future Developments in *Educational Research and Evaluation* in 2013.

Whilst Publication 5 provides evidence of an effective student evaluation system and quality improvement process within a school, Publication 6 provides evidence that a university-wide student evaluation system incorporated within a quality improvement process improves the quality of the student experience. This publication is a major contribution to the second research question.

Publication 7:   Development of a student evaluation quality culture: the eVALUate experience at Curtin

The transformation of teaching and learning within a university, achieved through the implementation of a university-wide online student evaluation system and subsequent projects, was not possible without a significant cultural shift in thinking and practice. The higher education literature provides principles of organisational cultural change however, to date, there had been no literature reporting how these principles have been implemented in practice. The aim of this paper was to share the experience of how a student evaluation quality culture was achieved through leadership that focused on communication, education and the involvement of all stakeholders. The paper outlined the events that led to the development of a new vision in teaching and learning and discussed the pivotal role of leadership and pedagogy in developing cultural change. Strategies implemented to effect cultural change were: communication, education (including professional development); recognition of early successes; consolidation; and evaluation of the student evaluation system. An evaluation of the system was undertaken using mixed methods. The greatest

improvements in the survey quantitative items were reported. The views of students and senior executive were reported as part of the evaluation of the system. The paper concluded with a commentary of future challenges and directions for the higher education sector in using student feedback for quality improvement of teaching and learning.

Publication 7 presents evidence confirming the successful implementation of an online university-wide student evaluation system. The contribution of this publication to the second research question lies in its focus on the implementation of a successful university-wide evaluation system through effective leadership and the development of cultural change. The author was invited to publish this paper as a chapter for a special issue on Enhancing Student Feedback and Improvement Systems in Tertiary Education for the *Commission of Academic Accreditation (CAA) Quality Series* in 2013.

Theme 3: Student perceptions informing teaching and learning

Publication 8:   Physiotherapy students' sources of stress, perceived course difficulty and paid employment: comparison between Western Australia and United Kingdom

Whilst there has been a plethora of literature published about student evaluations, there has been very little research on what students reveal in those evaluations about teaching and learning. The paper was an investigation on a specific issue raised by students in evaluations of their experiences in a course. Student comments revealed they were under considerable stress. To investigate their reports of stress in their course, a purpose designed questionnaire was developed for this research which included physiotherapy students from Western Australian and the United Kingdom. The aims of the paper were to identify the sources of stress in physiotherapy students and to determine whether subgroups of the student population identified different stressors. The analysis of this investigation was based on the responses of 304 physiotherapy students. Overwhelmingly, students reported that their stress was related to academic factors (rather than personal or financial factors) and the paper concluded with recommendations for curriculum design and course content.

This paper provided an approach to the investigation of the student voice rarely reported in the research literature. The paper uses quantitative methods and was published in *Physiotherapy Theory and Practice* in 2006.

Publication 8, an essential contribution to the third research question, highlights the need to undertake purposeful analysis of student evaluation data. In this case study, the student

comments revealed there were stressors not previously captured by the evaluation survey items that required further investigation. A valid and reliable survey was subsequently developed and employed to identify the reasons for the student's stress. The student voice provided essential input into subsequent course review and redesign.

Publication 9: Outcomes and evaluations: is there a relationship between indicators of student success and student evaluations of learning?

Following the Review of Australian Higher Education (Bradley et al., 2008) the Australian Government has highlighted the need for a strong focus on measuring and monitoring student engagement with an emphasis on the connection with student's achievement of learning outcomes. The paper was an investigation of the relationship between student evaluation data and measures of student outcomes (unit grades and course retention). The paper reports a unique approach to the analysis of student evaluation data using quantitative and qualitative (CEQuery and SPSS Text Analysis for Surveys) methods. The paper investigated the following questions. What are the students' perceptions of their learning experiences where the pass rate was high and where the pass rate is low? How many students fail to be retained by the course? For those students who fail, what comments do they make about the quality of their experience? The paper revealed the different experiences of students within a course and provided a unique link between data captured within a university student evaluation system and a student management system. The analysis for this study was based on the views of 2,920 students enrolled in a bachelor course. The findings provide rich information for academics in developing and reviewing courses and units and for understanding the experiences of student subgroups, particularly those who fail unit assessments.

The paper outlined a methodology for investigating the student experience that is unique. The research focuses on current national priorities; students' achievement of learning outcomes. The paper was published in *Research and Development in Higher Education: Connections in Higher Education* in 2012, a journal publication of the Higher Education Research and Development Society of Australia Inc. (HERDSA).

Publication 9 is an essential contribution to the third research question by revealing the relationships between the student perceptions of those factors that help and hinder their learning and measures of the success of their learning. This research precedes the rapidly emerging field of learning analytics in higher education.

Publication 10: Student perceptions of the teaching in online learning: an Australian university case study

Within the higher education sector, online unit and course offerings are rapidly increasing. The paper utilises the unique approach outlined in Publication 9. The aim of this paper was to provide teachers with a greater understanding of student perceptions of their learning experiences and to provide recommendations for improved teaching and learning online. The analysis for this study is based on the views of 19,974 students enrolled in Curtin units as part of the degree with Open Universities Australia. This research on online learning is unique and this paper reports the findings of a two part investigation that has also been published. The findings highlight the important role teachers' play in higher education particularly in providing feedback on student learning and in influencing the student experience.

The research focuses on understanding the student experience in online learning, a current global trend. The paper has been published in *Research and Development in Higher Education: The Place of Learning and Teaching* in 2013, a journal publication of the Higher Education Research and Development Society of Australia Inc. (HERDSA).

Publication 10 is an essential contribution to the third research question by revealing the importance of the academic–student relationship in online learning. Students consistently revealed their experiences in online learning were more positive than for students who learnt in face to face or blended modes. In particular, student comments revealed that they relied on quality teachers who are accessible and responsive, who communicate expectations clearly, and who provide quality, timely feedback on assessments.

4.0 Chapter four - Key research findings and recommendations

Student feedback has, for many decades, been used in universities for quality assurance, quality improvement, and as a teaching quality indicator that informs promotions, tenure and teaching awards. This research focused on the role of the student voice in quality improvement of teaching and learning aimed at improving the student experience. Detailed findings of the research have been included in Chapter two. This section outlines the key research findings under each of the research questions. This sections ends with a discussion on recommendations for future research and practice.

Research Question 1: What are the key factors underpinning the effective use of student feedback for quality improvement of teaching and learning in higher education?

Following the development of a new student evaluation system comprising a unit and teaching survey, repeated statistical testing indicated that the instruments are valid and reliable. The response categories for the categorical rating scale for each survey worked well, as intended. For both surveys, testing indicated that the quantitative item results should be reported as percentage agreement on each item. Unlike many other student evaluation surveys, the two surveys were designed so that they were valid but brief. Each item comprises a brief explanatory text for item clarification. The teaching evaluation survey is linked to the unit survey and has resulted in increased unit response rates.

The unit survey, based on the OFE student-centred paradigm is defensible in its measurement of students' perceptions of what helps and hinders their achievement of learning outcomes at the unit level (See Publication 1)[7]. The teaching survey measures multiple teaching attributes and not just one dominant trait. The items included in the teaching survey are consistent with those dimensions that have been demonstrated to increase student learning outcomes. The major point of difference for the items in the teaching survey relate to their wording: the teaching survey asks students to give feedback on whether the teacher characteristics help them learn (see Publication 2).

In establishing a culture of trust student anonymity was ensured within the evaluation system. Student comments provided a rich source of information about the methods of learning and teaching, the learning resources, the quality, skills, attitude, accessibility and responsiveness of their teachers, unit structure and expectations, and assessment standards

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[7] All Publications are provided in the section titled Publications, page 172.

and relevance. Student comments that were unprofessional or abusive were isolated (Publication 3). Strategies for educating students and teachers in appropriate and professional ways of working together to improve teaching and learning were developed. Continuous support and mentoring of teachers in interpreting student feedback is essential for their academic careers.

The design of the eVALUate system has been informed by the research literature, best practice and experiences gained from the development and implementation of CEW. CEW, an online student evaluation system implemented within a school, was effective in enhancing reflective practice on teaching and learning by staff and students (See Publication 4). Key features of CEW include: student anonymity, the timely reporting of high quality data; a formalised online method of closing the feedback loop; support for academic staff through mentoring and professional development; and the establishment of a successful learning community committed to quality improvement. Implementation of CEW in a school resulted in marked improvements in graduates' perceptions of the teaching and learning in the course as measured by the CEQ (Publication 5). These key features have informed the development of the university-wide eVALUate system for gathering students' perceptions for the purpose of quality improvement in teaching and learning.

A case study of Curtin's online student evaluation system (eVALUate) revealed that student evaluations can successfully be used to improve the student learning experience (Publication 6). Key in the development of the eVALUate system was the development of valid instruments for collecting the student voice. A system is effective when it prompts students and teachers to reflect on the outcomes of learning and there is transparent reporting of qualitative and quantitative feedback to all stakeholders. Methods for analysing student feedback including their comments have been employed to ensure the comprehensive investigation of the student experience. In addition, the system allows feedback to be translated into strategies for improvement and includes various approaches to closing the feedback loop. An effective university-wide culture of quality improvement is achieved through effective leadership and the implementation of evidence based pedagogy and practice (Publication 7). The leadership team implemented an effective culture of striving for quality in teaching and learning through numerous communication and education approaches (including professional development and support). In addition, the culture was effected through recognition and celebration of early successes across the university, the consolidation of initiatives to establish stability for those using the system and the evaluation of eVALUate. The adoption of eVALUate has brought about a significant shift in thinking and practice in teaching and learning within a university.

Research Question 2: What do student perceptions of their teaching and learning experience reveal about the quality of their learning in higher education?

To date, research using student evaluation data has revealed a great deal about which student groups give feedback, what they say, and their motivation and engagement in learning. The key research findings included in this thesis reveal that student feedback on teaching and learning can most successfully be researched when qualitative feedback is scrutinised along with quantitative feedback. In addition, linking of student feedback with other data, including measures of learning outcomes is essential for connecting student feedback on learning with student's achievement of learning outcomes.

An investigation into student evaluation comments has revealed that, students report issues that may not normally be captured in quantitative survey items. A case study within a school revealed that students were reporting feelings of stress in their course in CEW, the online student evaluation system. To uncover the sources of stress and understand students' academic and personal challenges, further research was undertaken. The USOS survey was developed for the purpose of this study of students enrolled in physiotherapy in Western Australia and the United Kingdom (Publication 8). The results of this study revealed that academic stress was rated the highest stressor by all students, particularly the amount to learn, time demands of the course, and conflict with other activities. The course was perceived to be more difficult than expected. Although students worked in paid employment, there was no correlation between the number of hours they worked and their feelings of stress (see 2.4.2.1 Academic stress). This study reveals that, student feedback in evaluations surveys can unearth teaching and learning questions that require further investigation.

Student feedback reveals that, student subgroups have different experiences of teaching and learning (see 2.4.2.4 Student perceptions and student outcomes). These differences reveal the factors students need in order to be successful learners. A study undertaken on student evaluations from units within a bachelor course revealed that:

- unsurprisingly, student perceptions differed between units;
- perceptions differed for students where the pass rate was high, or low;
- for one unit, students who failed had indicated they were highly satisfied with their experience, whilst for other units, students with high grades were either as satisfied or increasingly satisfied than those with lower grades;
- grade was not always a determinant of course retention; and

- comments from those who had failed their unit revealed those teaching and learning practices that students found to help or hinder their learning (Publication 9).

Analysis of student perceptions and their academic outcomes provides rich information for understanding students' experiences in a changing higher education context.

Using similar research methodology, an investigation on student perceptions of the quality of teaching in online learning has revealed that students' perceptions differ (Publication 10). Analysis of the students' comments revealed that the best aspects related to the teaching were: 1) the teacher and teaching characteristics (reported they were helpful, constructive, informative, motivating and approachable); the teacher was easy to understand and responded to questions in a timely manner; and 3) they felt supported by the teacher. Themes that emerged in relation to improvement in teaching were: 1) that communications were unclear or confusing; and 2) that feedback on their learning and assessments were not timely, were not clear or were confusing. The findings of this study provide insights into those factors that contribute to successful online learning.

Future research

Future research is recommended in relation to each of the three main themes: 1) survey development, validation and practice, 2) student evaluation for quality improvement, and 3) student perceptions informing teaching and learning. Consistent with the principles of survey design, revalidation of the eVALUate surveys is essential to ensure appropriate fitness for purpose given the changing context of higher education. Currently, the eVALUate unit survey has been translated into Estonian and has been validated using Rasch analysis within the higher education context of Estonia (Kumpas-Lenk et al., 2014). Retesting the reliability of the instrument and the rating scale is warranted with the emergence of current knowledge in the field of survey validation and reliability (Huybers, 2013; Morley, 2013). Research on the reasons why students do not give feedback and the views of non-responders will reveal opportunities to improve evaluation practices and provide data from students currently underrepresented. Research into acquiescence bias is also warranted to affirm responses from students, particularly in student populations in which this form of bias is more likely to occur.

Further research providing evidence on the use of student evaluations for quality improvement is warranted. First, research to determine whether students are more likely to reflect on their learning as a result of the eVALUate system is recommended. Second, research that explores teacher self-reflection of student feedback using eVALUate is necessary to determine the value of student feedback for enhancing teaching and learning practices and for teacher self-improvement. To date, there has been no research published

on data obtained from the eVALUate teaching survey and this research is essential. Investigations related to teacher's self-reflection using student feedback on their teaching and the impact of professional development on teaching skills are central to understanding and justifying teaching evaluation surveys for the purpose of quality improvement. Recent research has revealed that teachers experience positive and negative emotions in teaching and this affects teaching practice (Trigwell, 2012). Further research is recommended to examine teachers' emotional experiences when self-reflecting on student evaluations. Studies investigating the role of unit and teaching evaluations as: 1) indicators used by decision makers and senior executive for quality assurance; 2) criteria for promotions and tenure; and 3) for performance management are vital to direct internal quality processes within the higher education sector.

Finally, more research across universities into students' perceptions of their experiences in higher education, their engagement in the learning process and those factors that help or hinder their achievement of learning outcomes is essential. This research will be possible as institutions develop learning analytics and integrate their evaluation systems with other curriculum and student management systems. Such integration of systems and data will enable the efficient collection and analysis of data related to student learning that will enable academics to research and ensure appropriate pedagogies are developed for the future needs of students in a changing higher education and global environment.

Summary of research findings with recommendations

In summary, this research aimed to improve the quality of teaching and learning in higher education using student feedback.

The following key factors underpinned the effective use of student feedback for the improvement of the quality of teaching and learning in higher education and are recommended as effective strategies for higher education institutions.

1. An evaluation process should have a strong pedagogy and theoretical framework in order to enable scrutiny of the process and approach. The evaluation process should be linked with the institutions educational and learning goals and aligned with the institutions teaching and learning mission. The institution should develop a clear purpose for using student feedback that is founded on improving the student experience and their achievement of learning outcomes and clearly articulated within the institutions quality framework.

2. Develop valid and reliable surveys with key stakeholders within a defensible teaching and learning paradigm and undertake full psychometric testing of the items and scales.

Survey instruments should provide information about students' experiences with a focus on their achievement of learning outcomes rather than students' satisfaction with teaching and/ or the teacher. This shift from a teacher focus to a student focus ensures that quality is measured in terms of student learning and outcomes rather than teaching inputs. Do not include additional items as this invalidates the survey and diminishes the ability to benchmark results. Design the scale to reduce biases, for example, avoid a middle scale to reduce acquiescence bias and place the positive scale descriptor (e.g. strongly agree) on the left side of the scale to reduce left hand bias. Undertake valid reporting of the data not converting the data to a mean or numerical score unless the scale has been tested as a Likert scale. This evidence based approach ensures the student voice is successfully captured, responses are representative, and the feedback is meaningful and focussed on student learning and quality improvement. In the case of the eVALUate unit and teaching surveys, the survey items gather students' perceptions of their achievement of learning outcomes and the quality of teaching is based on key teacher characteristics that help students learn. Student feedback is one of multiple sources of data used within the University's quality framework.

3. Adopt a culture of teaching and learning excellence and quality improvement within the university to ensure improvements in teaching and learning. A student evaluation quality culture was successfully achieved through leadership that focussed on communication, education and the involvement of all stakeholders in the university. This culture is supported by teaching and learning leaders who are responsible for the development and implementation of the process, maintenance of the policy, protocols, business rules and a communications plan to keep all stakeholders informed of practice and change as appropriate. The leader should be familiar with research evidence particularly related to staff misconceptions, develop the appropriate guidelines and support for all stakeholders, lead all elements of professional development related to student evaluations, lead the integration of evaluation data into course reviews and lead research of the quantitative and qualitative data.

4. Adopt an effective systematic approach to reporting of quantitative and qualitative data to all stakeholders in a timely and transparent manner and provide plans for improvement. For example, adopt a de facto standards approach to interpreting the survey data such as a colour coded 'traffic light' method for program and school reports. Use language that is appropriate to the reporting of results when communicating any element of the evaluation system e.g. *the surveys provide feedback on students' perceptions of their achievement of learning outcomes*; and *percentage agreement with each item*. Do not use terms such as *rating, average, mean, score* and so on. Develop guidelines that provide information that all student comments are valid and include a guide on the representativeness of the sample to assist with the interpretation of reports.

Such an approach can be enabled when there is a well-defined governance structure for the evaluation process and reporting to the relevant stakeholders and university committees. In the case of eVALUate, a suite of reports is immediately available online to students, university staff and the wider community when student grades are released. This timely release of data ensures changes to units and teaching can be planned and implemented without delay. In addition, student feedback is routinely analysed for courses (for comprehensive course review), faculties and the university and reported to all stakeholders includes a detailed analysis of the students' comments and recommended action strategies for improvement. A mixed methods approach is applied to analyse the qualitative and quantitative data and the qualitative analysis utilised a unique approach developed as part of this thesis employing CEQuery and SPSS Text Analysis for Surveys. A systematic approach is used to analyse all student feedback so the University can better understand the student experience of teaching and learning and to determine the effects of educational initiatives, innovations and practices.

5. Strengthen teaching and learning partnership between students and teachers in their commitment to quality improvement through the achievement of student and teacher self-reflection on the outcomes of learning. For students, this was achieved through the design of the surveys which specifically prompts students to reflect on their motivation and engagement as well as those factors that help or hinder their achievement of learning. This commitment is further facilitated through the transparent reporting of student feedback to all stakeholders, including all students at the university. Self-reflection for teachers is evident when student feedback is translated into strategies for improvement and made transparent to students through the online practice of closing the feedback loop on published unit reports and on unit outlines. These published reports and unit outlines are accessible to all students and staff in the university. In addition, adopt a formative evaluation approach using techniques such as 'Stop, Start, Continue; to gather early feedback from students. Within the Australian sector, many universities have adopted the Australian University Teaching Standards and Criteria framework using the criteria for position statements when recruiting teaching academics, promotions, university award programs, performance review and tenure (see case studies at http://uniteachingcriteria.edu.au/). Student feedback and staff reflection provides an important source of evidence for the seven criteria within this framework for Academic Levels A-E.

This research also aimed to reveal student perceptions of their teaching and learning experience in higher education. The main findings are outlined below.

1. Student feedback can reveal teaching and learning issues not normally captured in evaluation surveys that require further investigation. As an example, students' sources of stress may be revealed in subpopulations and require additional scrutiny.

2. Student subgroups have different experiences of teaching and learning. Notably, students who fail may report they are highly satisfied with their experience and students who achieve high grades may report they are dissatisfied with their experience. There is usually greater participation in evaluation surveys by female students, full-time students and students with a higher semester-weighted average. Part-time students, international students, students in older age groups and students with a higher semester weighted average are more likely to report higher satisfaction with their teaching and learning experience. These findings allay commonly held misconceptions held by academics on which student groups give feedback and are most dissatisfied.

3. Students tend to write more positive comments that negative when giving feedback. Consistently, the most frequent topic students comment about is methods of teaching and learning and of the seven topics most commonly discussed in the best aspects; three were related to the teachers – their quality and attitude, accessibility and responsiveness, and their teaching skills. Unprofessional and abusive comments are isolated in anonymous surveys and the most feasible process for minimising such comments lies with educating students to communicate professionally. In addition, academics should be provided with the appropriate support to interpret evaluation reports so that isolated comments do not detract from the rich and valuable feedback provided by students on those factors that help or hinder their learning.

4. Students studying online report more positive experiences than those in face to face or blended modes. Their comments reveal that teachers who are accessible and positive, who communicated expectations clearly and who provide quality, timely feedback on assessments provide students with a quality teaching and learning experience.

Additional Publications relevant to the thesis

Journal – Refereed Article

Blackmore, A. M., Tucker, B., & Jones, S. (2005). Development of the undergraduate sources of stress questionnaire. *International Journal of Therapy and Rehabilitation, 12*, 99-106. doi: 10.12968/ijtr.2005.12.3.19553

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Appendices

Statement of Contribution of Others and Copyright

Endorsement by Professor Beverley Oliver

I, Beatrice Tucker led the development of key concepts and was the major author of this paper including - major portions to the literature review, methods, results, discussion and conclusion sections, excluding descriptions of the statistical testing and details of the statistical results:

> Tucker, B., Oliver, B., & Gupta, R. (2012). Validating a teaching survey which drives increased response rates in a unit survey. *Teaching in Higher Education*, 1-13. doi: 10.1080/13562517.2012.725224

B M Tucker

I, as Co-author, endorse that this level of contribution by the candidate indicated above is appropriate.

Beverley Oliver

I, Beatrice Tucker, contributed through the development of key concepts, the literature reviewed and citied throughout the paper (that is, within the introduction, student evaluation of educational quality, the course experience questionnaire, development of eVALUate), small portions to the methods, discussion and conclusion sections to the following paper:

> Oliver, B., Tucker, B., Gupta, R., & Yeo, S. (2008). eVALUate: an evaluation instrument for measuring students' perceptions of their engagement and learning outcomes. *Assessment & Evaluation in Higher Education, 33*(6), 619-630. doi: 10.1080/02602930701773034

B M Tucker

I, as Co-author, endorse that this level of contribution by the candidate indicated above is appropriate.

Beverley Oliver

Endorsement by Professor Shelley Yeo

I, Beatrice Tucker, contributed through the development of key concepts, the literature reviewed and citied throughout the paper (that is, within the introduction, student evaluation of educational quality, the course experience questionnaire, development of eVALUate), small portions to the methods, discussion and conclusion sections to the following paper:

> Oliver, B., Tucker, B., Gupta, R., & Yeo, S. (2008). eVALUate: an evaluation instrument for measuring students' perceptions of their engagement and learning outcomes. *Assessment & Evaluation in Higher Education, 33*(6), 619-630. doi: 10.1080/02602930701773034

B M Tucker

I, as Co-author, endorse that this level of contribution by the candidate indicated above is appropriate.

Shelley Yeo

Endorsement by Dr Ritu Gupta

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Tucker, B., Oliver, B., & Gupta, R. (2012). Validating a teaching survey which drives increased response rates in a unit survey. *Teaching in Higher Education*, 1-13. doi: 10.1080/13562517.2012.725224

B M Tucker

I, as Co-author, endorse that this level of contribution by the candidate indicated above is appropriate.

Ritu Gupta

I, Beatrice Tucker, contributed through the development of key concepts, the literature reviewed and citied throughout the paper (that is, within the introduction, student evaluation of educational quality, the course experience questionnaire, development of eVALUate), small portions to the methods, discussion and conclusion sections to the following paper:

Oliver, B., Tucker, B., Gupta, R., & Yeo, S. (2008). eVALUate: an evaluation instrument for measuring students' perceptions of their engagement and learning outcomes. *Assessment & Evaluation in Higher Education*, 33(6), 619-630. doi: 10.1080/02602930701773034

B M Tucker

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Ritu Gupta

I, Beatrice Tucker, led the development of key concepts and was the major author of this paper including - significant portions to the introduction, discussion and conclusion sections where the information relates to Western Australia, with a modest input on the methods and results sections to the following paper:

Tucker, B., Jones, S., Mandy, A., & Gupta, R. (2007). Physiotherapy students' sources of stress, perceived course difficulty and paid employment: Comparison between Western Australia and United Kingdom. *Physiotherapy Theory and Practice*, 22(6), 317-328.

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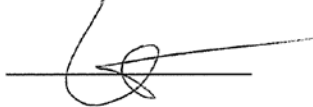
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Endorsement by Julie-ann Pegden

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> Tucker, B., Pegden, J., & Yorke, J. (2012). *Outcomes and evaluations: Is there a relationship between indicators of student success and student evaluations of learning?* Paper presented at the 35th HERDSA Annual International Conference. Research and Development in Higher Education: Connections in Higher Education, Hobart Australia. http://www.herdsa.org.au/wp-content/uploads/conference/2012/HERDSA_2012_Tucker.pdf

B M Tucker

I, as Co-author, endorse that this level of contribution by the candidate indicated above is appropriate.

Julie-ann Pegden

Endorsement by Dr Connie Price

I, Beatrice Tucker led the development of key concepts and was the major author of this paper including - major portions to the literature review, methods, results, discussion and conclusion sections:

> Tucker, B., Halloran, P., and Price, C. (2013). Student perceptions of the teaching in online learning: An Australian university case study. In S. Frielick, N. Buissink-Smith, P. Wyse, J. Billot, J. Hallas & E. Whitehead (Eds.), *36th HERDSA Annual International Conference* (pp. 470-484). Auckland, New Zealand: Research and Development in Higher Education: The Place of Learning and Teaching. Retrieved from http://www.herdsa.org.au/?page_id=3502

B M Tucker

I, as Co-author, endorse that this level of contribution by the candidate indicated above is appropriate.

Connie Price

Endorsement by Dr Patrick Halloran

I, Beatrice Tucker led the development of key concepts and was the major author of this paper including - major portions to the literature review, methods, results, discussion and conclusion sections:

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Patrick Halloran

Endorsement by Professor Leon Straker

I, Beatrice Tucker, led the development of key concepts and was the major author of this paper including - major portions of the introduction and methods sections, a significant portion of the discussion and conclusion sections, and smaller portions of the results to the following paper:

> Tucker, B., Jones, S., & Straker, L. (2008). Online student evaluation improves course experience questionnaire results in a physiotherapy program. *Higher Education Research and Development, 27*(3), 281-296.

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Leon Straker

I, Beatrice Tucker, led the development of key concepts and was the major author of this paper including - major portions to the paper with modest input on the sections titled 'Benefits on online evaluation' and 'Program management' to the following paper:

> Tucker, B., Jones, S., Straker, L., & Cole, J. (2003). Course evaluation on the Web: Facilitating student and teacher reflection to improve learning. *New Directions for Teaching and Learning, 96* (Winter), 81-94.

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Leon Straker

Joan Cole   (now retired and unable to contact)

Note: Professor Joan Cole now deceased.

Beatrice Tucker

From:	Anderson, Lee-Ann <Lee-Ann.Anderson@tandf.co.uk>
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eVALUate: an evaluation instrument for measuring students' perceptions of their engagement and learning outcomes

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*e*VALUate: an evaluation instrument for measuring students' perceptions of their engagement and learning outcomes

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In the current climate in Australian higher education, quality assurance in university teaching is a priority. In particular, the introduction of the Learning and Teaching Performance Fund (LTPF) has refocused attention on universities' internal student evaluation survey instruments. This paper reports the development, validation and implementation of a new unit survey instrument which prompts students to reflect on what helps their achievement of unit learning outcomes, and to report their levels of motivation, engagement and overall satisfaction with a semester-long course or unit of study. The instrument (*e*VALUate) was created from precepts reported in the research literature, current practices in evaluating teaching, and sound quality assurance practices appropriate to a university outcomes-focused education paradigm.

Introduction

There are multiple stakeholders in the evaluation of teaching and learning: students, academics, university administrators, employers, parents and the government (Knapper 2001). Whilst student feedback can be obtained in many informal ways, formal instruments provide the mechanism for obtaining feedback from an entire student group and document students' experiences in a systematic way. Student evaluation systems have been employed in higher education systems worldwide since the 1950s and a plethora of literature has been written about students' rating systems (Marsh and Roche 1992; Sorensen and Reiner 2003).

Recent developments in quality assurance practices in Australian higher education have brought into sharper focus the task of evaluating teaching and learning. While previously the Australian Universities Quality Agency (AUQA) required institutions to produce a Teaching and Learning Plan as well as systematic procedures for reviewing the plan, Federal government funding opportunities are predicated on other performance indicators such as a strategic focus on learning and teaching (as evidenced by a systematic student evaluation of learning and teaching) (Department of Education Science and Training 2004). The Learning and Teaching Performance Fund (LTPF) initiative provides the impetus for universities to use valid and reliable student evaluation instruments which focus on learning as well as teaching. This means that universities might need to re-examine their student feedback instruments to ensure that the teaching practices they implicitly or explicitly favour are in harmony with the institution's philosophy of teaching and learning. Such was the case at Curtin University of Technology, which has recently developed and implemented a student feedback system directly aligned to its educational goals. This paper describes Curtin's previous use of various formal student feedback surveys and the process of developing and validating a new instrument.

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Surveys previously used at Curtin

Student evaluation usually employs survey instruments designed to provide feedback on various aspects of their learning experiences. To date, many evaluation systems have emphasised the characteristics of the teacher. Recent research, however, suggests that students' perceptions of teachers and teaching produce questionable outcomes (Davies et al. 2005). In addition, the items in these surveys are used to measure teaching practices, many of which have only implied benefits. Two surveys in common use will be discussed in detail: SEEQ and (university-based derivatives of) the CEQ. Both have been in use at Curtin since the 1990s, although neither has achieved university-wide coverage.

Student evaluation of educational quality

The Student Evaluation of Educational Quality (SEEQ) survey, designed and validated in 1982 (Marsh 1982), asks students to judge how well each of 35 statements (for instance, 'You found the course intellectually stimulating and challenging') describes their teacher or unit, using a five-point scale from 'very poor' to 'very good'. The statements are intended to reflect nine different aspects of effective teaching: learning/value, enthusiasm, organisation, group interaction, individual rapport, breadth of coverage, examinations and grading, assignments and workload, and difficulty. The factor structure of SEEQ has been confirmed in several studies (Brennan et al. 2002). Some items in SEEQ imply that good teachers 'enhance presentations with the use of humour' and present in a way which 'facilitates note-taking'. Teachers wanting good ratings may be encouraged to adopt transmissive practices, which, while useful in certain contexts, might not always engage students in learning. Even though it is a valid and reliable instrument, research findings suggest that teacher ratings do not improve over time; in fact, students' evaluations may change teachers' self-perceptions rather than teaching behaviour (Brennan et al. 2002).

Although its adoption at Curtin in the 1990s was well researched and supported, there were several reasons why SEEQ became less useful in recent years:

(1) As discussed previously, some items in SEEQ privilege transmissive teaching practices. The use of those items implies that these practices are to be emulated whereas Curtin has agreed that excellent learning experiences should be interactive and engaging (Curtin University of Technology, 2003).

(2) The more specific the items in an evaluation instrument, the more they privilege those aspects, perhaps to the detriment of admirable qualities that are not mentioned.

(3) At Curtin, use of SEEQ was voluntary and results were reported only to the participating teacher. This produced skewed university norms, i.e. the university norm is an average of the ratings of teachers who request that SEEQ be done, not a measure of teaching performance of the whole teaching cohort.

(4) The confidential use of SEEQ meant it was impossible to use results for university-wide benchmarking purposes (and eligibility for the LTPF was not achieved).

(5) The system was only available on paper so was inefficient or inconvenient for students and teachers at Curtin's regional, interstate and international campuses.

(6) Typically, SEEQ was distributed in class during the last week of teaching, and there was a separate form for each teacher in a unit that requested feedback. This meant that students could potentially be asked to spend class time in that last week filling in up to 20 SEEQ forms. While response rates were anecdotally robust (though untested and unreported), the quality of the data was possibly influenced by the context in which they were gathered.

The Course Experience Questionnaire

The Course Experience Questionnaire (CEQ) was developed primarily as a measure of the surface or deep learning approaches that students were being encouraged to adopt as a result of various teaching practices (Brennan et al. 2002). Over the years, the instrument has been subjected to many trials and changes, and the advantages and limitations of the CEQ have been well documented (Brennan et al. 2002; Richardson 2005). Nevertheless, it is currently used as a quality measurement tool, and three of its scales are core to the calculation of the LTPF: in its first implementation, three out of seven data sources were drawn from the CEQ (Department of Education Science and Training 2004): satisfaction with Generic Skills; satisfaction with Good Teaching and Overall Satisfaction. This use of the CEQ scales of indicators of student satisfaction is clearly not intended by its creator: student satisfaction is seen by Ramsden as a misuse of the CEQ: 'The CEQ is not, repeat not, primarily a survey of student satisfaction. Evidence of satisfaction is provided by a single item, but this is mainly a check on the validity of the other dimensions' (Ramsden 2003). In spite of its use nationally, Coates suggests that the CEQ is less useful than it was previously because of its focus on teaching (rather than learning) and its coverage of formal teaching contexts:

> CEQ data is accepted as providing an accepted measure of the quality of teaching (McKinnon et al. 2000). Although reinforced through years of national administration in Australia, this is an assumption which is open to question.

> A major limitation of the CEQ in generating data for the purposes of determining the quality of university education is its exclusive focus on teaching … contemporary constructivist theories suggest that learning rather than teaching is what really matters in education…. Given this, a measure which focuses on teaching alone would provide a significant, although insufficient, index of the quality of education.

> Another major limitation of the CEQ is its core focus on what teachers do in formal instructional settings…. Given an increasingly large, flexible and open higher education environment with ever diversifying types of students, understanding how students spend their time outside class is being seen as increasingly important. With only information about how students spend their time in-class, institutions are limited in their capacity to explicitly manage the student experience and to leverage out-of-class time to enhance learning. (Coates 2005, 29)

Other salient findings call into question the use of the CEQ as the national benchmarking tool:

> Students produce higher scores in departments that pursue student-centred or experiential curricula through such models as problem-based learning. (Brennan et al. 2002, 20)

In terms of the LTPF, this indicates that universities with a higher proportion of students undertaking courses in disciplines which lend themselves to 'student-centred or experiential learning' are likely to rank more highly.

> Long and Hillman (2000, 25–29) found in particular that ratings on the Good Teaching scale as well as students' overall level of satisfaction varied inversely with the size of their institution. (Brennan et al. 2002, p. 20)

Again, in terms of the LTPF, this indicates that smaller universities are likely to rank more highly, and there has been some evidence of this already. According to Ramsden, comparison within the field of education is more reliable than comparison with whole institution (Ramsden 2003), and this change was to be made in the 2007 LTPF funding allocation (Department of Education Science and Training 2006).

Prior to its adoption for the LTPF, many Australian universities used the CEQ (or a derivative) as an internal instrument to evaluate units and teachers. Despite the fact that the CEQ was never intended to be a feedback mechanism for individual subjects or teachers, it has been adapted to refer to particular topics such as mechanics in a physics programme or photosynthesis

in a biology programme (Prosser et al. 1994) as well as whole of university (Ramsden 2003). This was also the case at Curtin: derivatives of the CEQ were adopted by Curtin Business School for its Unit Experience Questionnaire (UEQ), used since 1999 (Dixon and Scott 2003; Tucker et al. 2003); the School of Physiotherapy introduced Course Experience on the Web (CEW) in 2001 (Tucker et al. 2003); and Curtin's Annual Student Satisfaction (CASS) Survey has included some CEQ items (Curtin University of Technology 2004).

Development of *e*VALUate

When it became clear that Curtin needed to implement a university-wide system to achieve systematic evaluation of teaching, the university considered broadening one of the existing instruments such as SEEQ or CEQ derivatives (UEQ, CEW or CASS). The introduction of the LTPF in 2005 made university-wide adoption of a CEQ derivative more attractive, since any indication of future success in the LTPF was welcome. However, research has shown that national CEQ results are highly dependent on the graduating students' employment status (Scott 2005), and that the best indicator of graduating students' responses to the CEQ is attainable only from final-year students (Jones and Tucker 2005).

In addition, it was decided that the most compelling need was to adopt an instrument which allowed Curtin to measure its achievement of its stated goals in teaching and learning. The university's institutional statement, *Excellence in teaching and learning at Curtin* (Curtin University of Technology 2003), contained the following core tenets: teaching and learning is a partnership between staff and students; excellent teaching and learning focuses on the achievement of intellectually challenging learning outcomes in engaging learning environments and through flexible learning opportunities; assessment aligns with the learning outcomes; and systematic evaluation of teaching and learning is used to ensure quality. It is also clear that any sort of evaluation in this domain is 'high stakes'. Institutional evaluation tools are used to confer or (more commonly) withhold funding (as with the LTPF), to manage performance of teaching staff, and as a factor in staff promotion and teaching awards, and personal and institutional audit portfolios. Therefore, designing a survey instrument of this nature in an Australian university is a highly political process, requiring representation, fairness, and the likelihood that the instrument which is newly adopted by the institution will also be adopted by key stakeholders such as students, teaching staff and management.

It was decided that none of the existing instruments was appropriate for Curtin's purpose and the decision was made to develop a new unit evaluation instrument which would shift the focus more clearly to the student's perceptions of:

(1) What helps them to learn: reflective university graduates must be able to assess their learning practices, and critically analyse what helped and hindered those processes (Candy et al. 1994). These helping and hindering factors include the learning environment, learning resources and support services, and the quality of teaching (Ramsden and Entwistle 1981; Fenwick 2001; Scott 2005);
(2) What students bring to the teaching–learning partnership: their level of motivation (Bandura and Schunk 1981; Pintrich et al. 1994; Archer et al. 1999) and their engagement (Zhao and Kuh 2004; Coates 2005); and
(3) Students' overall satisfaction with the unit.

In essence, these are the three aspects of the final version of the *e*VALUate unit survey now implemented across Curtin. Its construction, validation and implementation were undertaken over a period of two years by a widely representative group using a consultative process. A working party comprising teaching academics with expertise in instrument design and evaluation,

academic staff developers, members of the Student Guild, and teacher representatives from across the university directed and reviewed the survey instrument's development, which involved:

(1) constructing the quantitative items and their rating scale, and the qualitative items;
(2) ensuring the instrument's reliability and validity (by trialling the instrument with students and ensuring the items supply usable data to teaching staff);
(3) refining the items in light of the above;
(4) ensuring the instrument is usable online;
(5) ensuring the results of student feedback are generated into reports usable by all stakeholders;
(6) ensuring ownership and adoption by key stakeholders.

There were five key development phases in this process, and the instrument underwent four version changes, as detailed below:

(1) initial item construction and testing (Version 1);
(2) refining items and determining an appropriate rating scale (Version 2);
(3) trialling the instrument online (Version 3);
(4) full-scale pilot (Version 4);
(5) implementation.

All four versions of the instrument appear in Appendix 1.

Testing and validation of the unit survey

Initial item construction and testing

During 2003 and 2004, Version 1 of the survey was subjected to three pilot studies (using unstructured interviews and paper-based questionnaires) with 102 students to determine the clarity and interpretation of items, completion time and survey format. Feedback was used to refine and reduce the number of the items, and to ascertain face validity. Version 2 of the survey (13 quantitative and three qualitative items) was trialled on paper with 658 students. Each quantitative item was accompanied by a 'help text' (a succinct sentence intended to clarify meaning). This version was trialled using two different response scales: a four-point response scale (strongly agrees, agree, disagree, and strongly disagree) was given to half the cohort, and a five-point response scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) was given to the other half. Most students were in face-to-face contexts; a small number participated online. The rating-scale data were analysed using both deterministic (Principal Components Factor Analysis) and stochastic (Rasch Rating Scale Model) methods. A factor analysis (SPSS Version 14.0 for Windows) of data from the four-point and five-point forms of the instrument was conducted to ascertain whether there was a factorial or one-dimensional structure within the two data sets. The factor analyses for both the four- and five-point scales resulted in a multidimensional solution. The majority of the items in the instrument appeared to be measuring a different trait (for example, student perceptions of what helped their achievement of the learning outcomes in their unit). Data from Item 12 (*Overall I am satisfied with this unit*) showed a strong linear dependence with data from the other items, suggesting that the item was eliciting a composite view that probably comprised the constructs embodied in the other items.

Rasch analysis was conducted on the four-point and five-point point forms of the instrument to ascertain how well the instrument was measuring the traits under investigation and to identify items that did not fit the model and needed further scrutiny. It was also used to determine whether the four-point or five-point scale would be used in the subsequent version of the instrument. The computer program used the Rasch Unidimensional Measurement Model (RUMM)

(Andrich, et al. 2000). RUMM: A windows-based item analysis programme employing Rasch unidimensional measurement models. Perth: Murdoch University. The Rasch analyses showed excellent data-to-model fit for both four- and five-point forms: the distributions of calibrated student responses matched the distributions of item difficulties very well and there was a high level of separation between the person and item parameters (Separation Indices = 0.93 and 0.96 respectively). For the four-point scale (without a 'neither agree nor disagree' category), the individual item fit statistics showed very good data-to-model fit with the exception of two items. For these items, the residuals were high (> 3.0) and the chi-squared probability values were low (< 0.05), indicating that the items were less accurate than others in eliciting relevant data. Apart from one other item, individual item thresholds for the four-point scale were all ordered in a linear sequence indicating logical and consistent use of the response categories. For the five-point scale (which included a 'neither agree nor disagree' category), only two items had a poor data-to-model fit; however, six items had disordered response category thresholds. This was due to the selection of the 'neither agree nor disagree' category – the students with overall highly affirmative responses and also those with overall less affirmative ratings for the other items had both selected this category for the six items. Ideally, these two groups of students should respectively have chosen either highly affirmative or less affirmative response categories.

Redefining items and determining an appropriate rating scale

In the trial of Version 2, students were asked about their level of satisfaction with the survey. The vast majority (89%) expressed overall satisfaction with the items, the amount of explanation provided, and the format and length of the survey. However, the following feedback and statistical testing led to alterations in the subsequent version:

- 16% of the 312 students who had used the four-point scale requested a 'neutral point' in the scale.
- An item asking about achievement of generic attributes was seen as confusing and irrelevant (that item was subsequently removed).
- Items asking about teachers' characteristics were confusing and created industrial sensitivities (those items were subsequently removed).
- Students requested more space for qualitative feedback.
- Given all the results on the use of a four- or five-point scale, it was decided that the following scale would be adopted and trialled in the next version: Strongly agree, Agree, Disagree, Strongly disagree and Unable to judge.

Trialling the instrument online

The refined instrument (Version 3) was trialled online in July 2005. It had 11 quantitative items (with 'help text' visible by default) with the new rating scale (as mentioned above) and two qualitative items. There were 95 units in the trial and a potential 10,305 responses which resulted in 1716 usable responses. Although there were teething issues with the online system, the instrument was successfully offered to this larger sample of students. Rating scale data from 1664 survey forms were deemed suitable for statistical analysis. The majority (78%) of students either 'agreed' or 'strongly agreed' with each of the quantitative items. This may have been due to sampling bias because of the voluntary nature of the participating unit coordinators. Therefore, a series of factor analyses was performed for 50 bootstrapped samples and the original samples. For all samples, 8–9 factor solutions accounted for approximately 90% of the variance. The varimax rotation revealed a multidimensional solution, indicating that each item in the survey was evaluating a different aspect of teaching and learning. This suggested that all items in this version of

the survey should be retained. A Rasch analysis of the sample confirmed this multi-dimensional nature of the instrument, with only four of the items having chi-squared probabilities greater than 0.05. The 'Unable to judge' category was chosen by respondents at about the same level (2.4%) for all items except 5 and 10 (which attracted over 4% of respondents, nearly double the percentage for other items). As a result of further written and oral feedback on all items, it was decided that the wording of items 5, 9 and 10 be modified slightly.

Full-scale pilot

The fourth (and current) version of the survey was subjected to a full-scale pilot in 2098 units at all Curtin's Western Australian and Malaysian campuses in November 2005 (with 80,433 potential survey submissions by 23,640 students). The survey was available for online student submission for six weeks (the last three weeks of teaching, study week, and the two-week examination period). At the close of data gathering, there were 17,722 responses by 6036 students (a response rate of 22% by 25% of eligible students). Once again item 5 (*Feedback on my work in this unit helps me to achieve the learning outcomes*) recorded a relatively high proportion of 'Unable to judge' responses. Factor analysis indicated that approximately 90% of variance coverage was provided by a seven-factor solution. Under varimax rotation, each item loaded to a unique factor. Once again, the data did not conform to the requirements for the Rasch rating scale model. The fit residual standard deviations in item–person interaction were far too high and the total chi-squared probability in item–trait interaction was too low. The power of test of fit was excellent based on the separation index. The student–parameter and item–parameter were sufficiently separated indicating that the instrument cannot be considered a measure of a single trait, and therefore responses to separate items should not be summed. The rating scale provided students with appropriate choices. In essence, the survey is acceptable as long as results are reported as percentage agreement with each item. Because the instrument does not work as a measure of a single trait, the responses for each item within any one report should not be summed or aggregated, and no single item (for example, item 11 overall satisfaction) should be used as an indicator of overall results.

Implementation

In semester 1, 2006, the same Version 4 of the survey was implemented for all coursework units at Curtin's Western Australia, Sydney and Malaysia campuses. At the close of the six-week data-gathering period, there were 25,090 surveys submitted. Once again, factor analysis indicated approximately 90% of variance coverage was provided by a seven-factor solution, and under varimax rotation each item loaded to a unique factor. Again, Rasch analysis confirmed previous findings that the survey in its current form is acceptable as long as results are reported as percentage agreement with each item, that the responses for each item within any one report cannot be summed or aggregated, and no single item can be used as an indicator of overall results.

Final discussion and conclusion

After this trial and implementation process, *e*VALUate is a unique and simple unit survey which reports students' perceptions of what helps their achievement of learning outcomes (items 1 to 7), students' level of motivation and engagement (items 8 to 10) and their overall satisfaction with the unit (item 11). Two qualitative items ask about the most helpful aspects of this unit and how the unit might be improved. Results are reported as percentage agreement with each of the 11 items at the unit level (aggregated data at university, faculty and course levels are also available). In general, percentage agreement figures are very positive but sufficiently discriminating

to indicate areas that need attention. For example, throughout the development of *e*VALUate, Item 5, which is about feedback, has attracted the highest percentage of 'Unable to judge' responses as well as the lowest percentage agreement at all levels (course, faculty and university). Investigation of the qualitative feedback has confirmed that this is in fact an area of concern for the university in that some students are unclear as to whether the feedback they receive helps them to achieve the learning outcomes, and others believe the amount of feedback they receive is insufficient or unhelpful. Further investigation of this matter is under way.

The *e*VALUate unit survey instrument is now progressively replacing all previous unit evaluation instruments such as SEEQ and CEQ derivatives at Curtin. Teaching evaluation is also administered within the eVALUate system, but the unit and teaching surveys are separated, and reports from the voluntary teaching evaluations are confidential to the participating teacher. Curtin has adopted a clear pedagogical plan to implement outcomes in all its units and courses, and the *e*VALUate unit survey measures student perceptions of the effectiveness of learning experiences in helping students achieve those outcomes. Whereas some evaluation systems emphasise the characteristics of the teacher, or privilege certain teaching practices, the *e*VALUate unit survey simply asks the student to report his/her perceptions of what is helping him/her to learn (which is, after all, the aim of teaching) and provides staff with sufficient indication of what is helping or hindering learning at the unit level. Qualitative and quantitative data collected in response to four versions of the unit survey have been used to develop and refine the *e*VALUate instrument and to show that it is fair and valid and produces a defensible measure of students' perceptions of what helps and hinders their achievement of learning outcomes at the unit level. The instrument is currently being implemented across the university, and further testing will contribute to its refinement and future use.

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Appendix 1:   The four versions of the *e*VALUate unit survey

Version 1

1.   The learning outcomes were communicated clearly to me.
2.   The learning experiences were intellectually challenging.
3.   Learning experiences (either face-to-face or online) were engaging.
4.   Learning resources (such as texts, readings, websites, lab manuals and equipment) were up to date.
5.   Learning resources (such as texts, readings, websites, lab manuals and equipment) were accessible.
6.   Assessment tasks related directly to the learning outcomes.
7.   Feedback on assessment tasks was given in reasonable time.
8.   Assessment tasks were weighted appropriately.
9.   The workload was reasonable.
10.   I was prompted to work towards the achievement of the course learning outcomes.
11.   The pace was helpful for my learning.
12.   I took responsibility for my learning.
13.   I made full use of the learning experiences and resources.
14.   I was motivated to achieve the learning outcomes as fully as I could.
15.   I thought about how I could learn more effectively.
16.   The teacher communicated effectively.
17.   The teacher was enthusiastic about teaching the subject.
18.   The teacher seemed knowledgeable in the subject area.
19.   The teacher seemed sensitive to students with learning difficulties.
20.   The teacher showed respect for students as learning partners.
21.   The teacher was reasonably accessible for help.
22.   The teacher used teaching practices which helped my learning.
23.   The teacher seemed to reflect on how student learning could improve.
24.   What was most helpful to your achievement of the learning outcomes in this unit?
25.   What was least helpful to your achievement of the learning outcomes in this unit?
26.   Do you have any other comments?

Version 2

Quantitative items with the following rating scale (Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree)

1.   The learning outcomes in this unit are clearly identified.
2.   The learning experiences in this unit help me to achieve the learning outcomes.
3.   The learning resources in this unit help me to achieve the learning outcomes.
4.   The assessment tasks in this unit evaluate my achievement of the learning outcomes.
5.   Feedback on my work in this unit is helping me to achieve the learning outcomes.
6.   The workload in this unit is appropriate to the achievement of the learning outcomes.
7.   The quality of teaching in this unit helps me to achieve the learning outcomes.
7A.   The teacher in this unit:
   ● Is knowledgeable in the subject area
   ● Is organised
   ● Encourages active student participation in learning
   ● Explains concepts clearly
   ● Is inspiring

- ● Is enthusiastic about teaching this subject
- ● Is sensitive to students' learning needs
- ● Is available for help

8. I am motivated to achieve the learning outcomes in this unit.
9. I make best use of the learning experiences and resources in this unit.
10. I think about how I can improve my learning in this unit.
11. In this unit I am being encouraged to develop my abilities in the following areas:
    - ● Applying knowledge, principles and concepts in my subject area
    - ● Thinking critically, creatively and reflectively
    - ● Accessing, evaluating, and integrating information from various sources
    - ● Communicating effectively
    - ● Using technologies appropriately
    - ● Utilising lifelong learning skills (e.g. learning how to learn)
    - ● Examining how knowledge in this unit is applicable in international settings
    - ● Examining how knowledge in this unit develops cultural awareness
    - ● Professional skills such as ethics and team work
12. Overall, I am satisfied with this unit.
    Qualitative items:
13. Which aspects of the unit have been most helpful to your learning?
14. How could this unit be improved?
15. Do you have any other comments about this unit?

Version 3

Quantitative items with the following rating scale (Strongly agree, Agree, Disagree, Strongly disagree and Unable to judge)

1. The learning outcomes in this unit are clearly identified.
2. The learning experiences in this unit help me to achieve the learning outcomes.
3. The learning resources in this unit help me to achieve the learning outcomes.
4. The assessment tasks in this unit evaluate my achievement of the learning outcomes.
5. Feedback on my work in this unit helps me to achieve the learning outcomes.
6. The workload in this unit is appropriate to the achievement of the learning outcomes.
7. The quality of teaching in this unit helps me to achieve the learning outcomes.
8. I am motivated to achieve the learning outcomes in this unit.
9. I make best use of the learning experiences in this unit.
10. I think about how I can learn more effectively in this unit.
11. Overall, I am satisfied with this unit.
    Qualitative items:
12. Please comment on the most helpful aspects of the unit.
13. Please comment on how you think the unit might be improved.

Version 4: Current version

Quantitative items with the following rating scale (Strongly agree, Agree, Disagree, Strongly disagree and Unable to judge. *Explanatory text in italics appears online by default*)

1. The learning outcomes in this unit are clearly identified.
    The learning outcomes are what you are expected to know, understand or be able to do in order to be successful in this unit.
2. The learning experiences in this unit help me to achieve the learning outcomes.

The learning experiences could include: face-to-face lectures, tutorials, laboratories, clinical practicums, fieldwork, directed learning tasks, and online and distance education experiences.

3.   The learning resources in this unit help me to achieve the learning outcomes.
Learning resources could include print, multimedia and online study materials, and equipment available in lectures, laboratories, clinics or studios.

4.   The assessment tasks in this unit evaluate my achievement of the learning outcomes.
Assessment tasks are those which are rewarded by marks, grades or feedback. Assessment tasks directly assess your achievement of the learning outcomes.

5.   Feedback on my work in this unit helps me to achieve the learning outcomes.
Feedback includes written or verbal comments on your work.

6.   The workload in this unit is appropriate to the achievement of the learning outcomes.
Workload includes class attendance, reading, researching, group activities and assessment tasks.

7.   The quality of teaching in this unit helps me to achieve the learning outcomes.
Quality teaching occurs when knowledgeable and enthusiastic teaching staff interact positively with students in well-organised teaching and learning experiences.

8.   I am motivated to achieve the learning outcomes in this unit.
Being motivated means having the desire or drive to learn, to complete tasks and to willingly strive for goals.

9.   I make best use of the learning experiences in this unit.
I prepare for and follow up on the learning experiences offered in this unit.

10.   I think about how I can learn more effectively in this unit.
I take time to think about how I can learn more effectively.

11.   Overall, I am satisfied with this unit.
Overall, this unit provides a quality learning experience.

Qualitative items

12.   What are the most helpful aspects of this unit?

13.   How do you think this unit might be improved?

Validating a teaching survey which drives increased response rates in a unit survey

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Validating a teaching survey which drives increased response rates in a unit survey

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At Curtin University, student perceptions of teaching and learning are gathered and reported online through eVALUate, a system that includes separate unit and teaching surveys. This article reports the development and validation of one of those surveys, the eVALUate teaching survey, which was developed based on the research literature on excellent teaching and evaluation. Since its development in 2006, repeated statistical testing using progressively larger samples has shown that the survey is valid and reliable. Moreover, the way in which the teaching survey is deployed within eVALUate, appended to the unit survey, which provides crucial institutional data, has significantly increased university response rates. This validated instrument is used for self-reflection, professional development, and rewarding staff.

Keywords: teaching evaluation; student evaluation of teaching; higher education; student perceptions; surveys

Introduction

Obtaining feedback from students about their experiences in higher education (HE) is a generally accepted practice in universities. In Australia, most HE providers have developed institution-specific instruments and surveys (Barrie, Ginns, and Symons 2008; Davies et al. 2006). It is also generally accepted that evaluation of teaching and learning can lead to improvements in educational quality by highlighting teaching and learning strengths and weaknesses and by engaging teachers and students more actively in reflective practice (Biggs 1999; Ramsden 1992). Unsurprisingly, the collection and use of student feedback continues to be a sensitive political issue in education especially where used for performance management, quality assurance and public accountability (Arthur 2009; Chen and Hoshower 2003; Feldman 2007; Hendry and Dean 2002; Meade and Woodhouse 2000; Pounder 2007; Shah and Nair 2012).

Students clearly want to provide and have access to the results of student evaluations: websites such as RateMyProfessors.com, RateMyTeachers.com and Mylecturer.net are a testament to the popularity of student opinions of teaching (Otto 2008; Sonntag, Bassett, and Snyder 2009). Student bodies also conduct surveys: at Curtin, for example, the Student Guild publishes the results of a paper-based survey of units, albeit with very low student responses.

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There is considerable debate in the literature about the appropriate criteria for determining teaching quality (Al-Issa and Sulieman 2007; Cannon 2001; Feldman 2007; Ginns, Prosser, and Barrie 2007; Kulik 2001; Murray 2007; Patrick 2011; Spooren, Mortelmans, and Thijssen 2012). Researchers recommend that surveys of teaching quality in HE must be subjected to validity tests (Agbetsiafa 2010; Remedios and Lieverman 2008; Spooren and Mortelmans 2006). Many surveys ask students to give feedback on aspects of their learning and include items related to the teacher and their characteristics. In Australia, similar question types are used for unit and teacher surveys (Davies et al. 2010). Although question types are similar for teaching surveys, research shows that students and teachers have differing opinions about what they perceive to be good teaching. Students are more interested in the quality of teaching, rather than whether it is teacher or student-centred (Kember and Kwan 2000). In particular, students value the following in teachers: interpersonal skills (such as the ability to motivate, openness and listening, approachability, passion and enthusiasm); subject mastery presented clearly and logically; combined theory and practice; a just, ethical and understanding approach to students; empathy; and, less so, the 'technical aspects' of teaching such as organisation (McKeachie 2007; McLean 2001; Revell and Wainright 2009). In contrast, teachers value the following teaching skills most highly in other teachers: communication skills, expertise and presentation skills (McLean 2001). Differences in teachers' perceptions of good teaching have been shown according to whether they were content or learner-centred in relation to: instructional strategies, their focus on the class or the individual, preferred assessment type, accommodation for students' strengths and weaknesses, and their knowledge and experience (Kember and Kwan 2000).

At Curtin, a university-wide online evaluation system (eVALUate) is used for gathering and reporting students' perceptions of their learning experiences. Students can give feedback about their unit (subject) and their teacher(s) using two separate surveys: the eVALUate unit survey and the eVALUate teaching survey. The development and validation of the eVALUate unit survey has been published elsewhere (Oliver et al. 2008): the unit survey is unique as its quantitative items report students' perceptions of what helps their achievement of learning outcomes (Items 1–7), students' level of motivation and engagement (Items 8–10) and their overall satisfaction with the unit (Item 11). Two qualitative items ask about the most helpful aspects of this unit and how the unit might be improved.

In some institutions, student feedback is confidential and available only to the academic involved (Harvey 2003; MacLeod 2000). However, a confidential system prevents academics from benchmarking and limits the degree to which student feedback can be used meaningfully for institutional purposes (Harvey 2003; MacLeod 2000). Feedback systems used for staff performance and appraisal often permit selected members (e.g. Heads of Schools) to access the feedback. An evaluation system that can be used for staff development and appraisal requires a survey that includes questions related to the quality of the unit and the students' perceptions of teaching and learning (MacLeod 2000). Because of these factors, it was decided that in developing the eVALUate system, the teaching survey would be separated from the unit survey so that each survey could be used and reported to different audiences (Oliver et al. 2008).

The ensuing task was to devise a teaching evaluation survey that satisfied all university stakeholders: teaching academics, their line managers and students. This

article describes the process of developing and validating the eVALUate teaching survey, incorporating it into the online system, then enhancing response rates in such a way that individual teaching surveys were well subscribed. In addition, and because of the way the online system was built, unit survey response rates were also boosted and this meant that data crucial to university-wide aggregations of performance were strengthened rather than compromised.

Development, testing and validation of the teaching survey (Version 1 and 2)

Development of the eVALUate system began in 2003 when investigators formed a working party comprising students, teaching academics, deans of teaching and learning and those with expertise in survey design and evaluation. The goal in developing the system was to align the survey to Curtin's agreed teaching and learning philosophy: Excellence in teaching and learning at Curtin (2003). The tenets within this philosophy reflect the University's commitment to student learning through an outcomes-focused approach whereby learning experiences are designed to help students achieve the unit learning outcomes. The system needed to be suitable for diverse teaching and learning experiences including face-to-face teaching, online learning, fieldwork, studios, laboratories and so on.

In the early stage of its development, items relating to the student learning experience and items related to teaching characteristics were combined in one survey (Oliver et al. 2008). Testing and validation of the combined survey and the rating scale were undertaken during 2003 and 2004 and are described in detail in Oliver et al. (2008). In brief, two versions of a survey which combined items about teaching and units were tested in three pilot studies. The feedback was used to modify and reduce the number of items. Feedback about the survey items was also collected from the academics involved in teaching the units in the Pilot study. All versions of combined survey appear in Appendix 1.

Version 2 (still incorporating items about teaching) was trialled in October 2004 with 658 students. The purpose of the trial was to determine content validity, the psychometric properties of the items, whether students used the full range of the categorical scales for the quantitative items, and whether the survey contained items encompassing the range of student learning experiences. Students from all faculties were represented: most were in face-to-face contexts and a small number of online students participated. Fourteen teachers in 17 units participated in the 2004 pilot. Results indicated that the survey was fair and valid for students and staff, and produced a defensible measure of students' perceptions of teaching and learning in an outcomes-focused environment. However, statistical analysis on the item 'The teacher seemed knowledgeable in the subject area' showed disordered thresholds suggesting students' responses were inconsistent.

After testing Versions 1 and 2 as described above, and because of the anomalous outcomes, the working party determined that the teaching items were to be removed from the survey with the exception of Item 7 on the 'quality of teaching'. The items that remained were from then on tested and validated as a unit survey. Perceptions of teaching, on the other hand, were to be collected in a separate survey (referred to here as the teaching survey). This decision was largely driven by two factors: first, this separating of the surveys would minimise industrial sensitivities, ensuring that unit survey results could be made accessible to all relevant stakeholders including

students. Second, there was a need to design a survey that would be suitable for multiple teaching and learning contexts and practices, particularly units with multiple tutors and teaching locations (onshore and offshore).

In 2006, a representative subcommittee commenced development of this teaching survey. An extensive review of the literature on excellent teaching characteristics was conducted with particular scrutiny of evaluation survey items such as those from the Student Evaluation of Educational Quality and the Good Teaching Scale in the Graduate Course Experience Questionnaire (Cannon 2001; Marsh 1982, 1987; McLean 2001; Ramsden 1991). A focus group comprising students, teaching academics and academic leaders was formed to discuss the characteristics of good teaching from each stakeholder perspective to determine suitable survey items. A process based on 'de Bono's Six Thinking Hats' was used to establish multiple views: participants were asked to place themselves, in turn, in the shoes of a student, a teacher and a line manager, and brainstorm the most important teaching characteristics from each perspective. Namely:

- Which teaching characteristics would you most want to evaluate as a student?
- Which characteristics would you most want feedback on as a teacher? and
- Which teaching characteristics would you most want feedback on to ensure quality?

The group summarised the characteristics, which appeared to be common and important for all stakeholder groups. Participants came to a consensus view. These characteristics were aligned with those in the literature as well as the items used in other teaching surveys. After consultation with academics from all faculties the following characteristics were agreed as the hallmark characteristics upon which the survey items would be based:

- Knowledgeable;
- Organised;
- Encourages active student participation with learning;
- Communicates clearly;
- Enthusiastic;
- Approachable;
- Sensitive to student learning;
- Available for help;
- Provides useful feedback; and
- This teacher helped me to learn

A revised teaching survey (Version 3) was prepared. The items reflected the agreed characteristics (with some descriptive text added for clarity), and the proposed survey was once again broadcast to faculties for feedback. In revising the items, the subcommittee agreed that items must describe observable teaching characteristics regardless of the type of student to staff interactions, the teaching context (lecture, tutorial, laboratory, fieldwork, fully online), or the cultural context (Curtin is Western Australia's most multicultural university with high enrolment of Indigenous Australians, and multiple regional and offshore campuses).

Full-scale pilot of the survey online (Version 3)

Version 3 was subjected to a full-scale pilot in Semester 1 2006. Teacher participation in the pilot was voluntary. Participants were informed that the results would be confidential to them, and asked to give their permission to allow the statistical analysis of the de-identified quantitative items. Participants were invited via email and a web link from the Vice Chancellor to participate in the pilot. Participants were directed to register for a teaching survey and nominate the unit(s) in which they wanted student feedback using the online system during a three-week period. The online registration feature made it possible for any number of teachers to request feedback in any unit and for a teacher to register for a survey in more than one unit.

The pilot survey was open for student responses for six weeks (the last three weeks of teaching, study week and the two-week examination period). The unit survey was available to all students via an online portal [called Online Access to Student Information Services (OASIS)]. When the survey period was open, students were directed via an email to a channel in OASIS that listed the unit names in which they are enrolled and showed links to the unit and teaching surveys. The unit survey link was active by default and students began by completing the unit survey. Just before the qualitative items in the unit survey, the following text appeared:

> You are now invited to answer two free text questions about the UNIT. Before you do this, you should be aware that the following teachers have requested individual feedback:
> **John Doe, Mary Smith, Joe Black**[1]
> If you wish your comments to be read ONLY by these teachers, use the **Teaching Evaluation** form (it is available when you have submitted this unit survey). If you wish your comments to be read by the unit coordinator and head of school, use the questions below.

This text was included in the unit survey to prompt students to give specific teacher feedback in the teaching survey. Once students submitted the unit survey an active link became visible to indicate that teaching surveys had been requested. Students could give feedback on an individual teacher by selecting that teacher's name. Students were able to give feedback for as many teachers as they chose within the one unit.

A total of 191 teachers participated in the pilot requesting a total of 347 teaching surveys. A total of 4363 surveys were submitted by students. The psychometric properties of the teaching survey were tested using Rasch Rating Scale model with the aid of RUMM2020 software, factor analysis and basic summary statistics. Less than 1.3% of responses were missing for each of the Items 1–7. Unable to Judge (UJ) was selected by fewer than 9% of respondents. Nevertheless, Item 4 (Provides useful feedback) recorded a relatively high proportion of UJ responses (8.8%). Students who were enrolled in more than one unit were more likely to submit responses for all or most of those units rather than for one unit only. Nonetheless, all responses were deemed independent for the purpose of statistical analysis. In addition to the missing observations, UJ responses are not included in further analyses.

Factor analysis of the sample confirmed that approximately 90% of variance coverage was provided by a 5 factor solution. The varimax rotation revealed that each question loaded to a unique factor indicating that each item was evaluating a

different teaching characteristic and that all items in this version of the survey should be retained. The data did not conform to the Rasch model (the fit residual standard deviations in item–person interaction were far too high and the total Chi square probability in item–trait interaction was too low) and more detailed analyses was not possible. The power of test of fit was excellent based on the separation index. The student parameter and item parameter were sufficiently separated indicating that the survey cannot be considered a measure of a single trait, and therefore responses to separate items should not be summed. At item level, Item 6 (is enthusiastic in teaching this unit) was good fit for the model, whereas Item 3 (is approachable) was a good fit only at 5% level of significance. The rating scale provided students with appropriate choices.

Hence statistical analysis revealed that the Version 3 of the teaching survey was acceptable as long as the results are reported as percentage agreement with each item. The wording of Item 4 should be explored further to reduce the level of UJ responses. Because the survey does not work as a measure of a single trait, the responses for each item within any one report cannot be summed or aggregated, and no single item can be used as an indicator of overall results.

Implementation (Version 3)

In Semester 1 2007, the same Version 3 of the survey was implemented for all coursework units at Curtin's Western Australia, Sydney and Malaysia campuses. At the close of the six-week data gathering period, there were 12,299 surveys submitted. The psychometric properties of the teaching survey were retested using Rasch Rating Scale model with the aid of RUMM2020 software, factor analysis and basic summary statistics. The UJ category was chosen by 6.9% of students and almost 1 in 10 selected UJ as their response to Item 4. Once again, factor analysis indicated approximately 87% of variance coverage was provided by a 5 factor solution, and under varimax rotation each item loaded to a unique factor. The eigenvalue for the first six components was greater than 0.7, indicating that all questions should be retained. Again, Rasch analysis confirmed previous findings that the survey in its current form is acceptable as long as results are reported as percentage agreement with each item, that the responses for each item within any one report cannot be summed or aggregated, and no single item can be used as an indicator of overall results.

In Semester 2 2007, Version 3 of the survey was again implemented for all coursework units at the same campuses. Testing was repeated on the data collected from 10,200 respondents. Results of the statistical analysis were consistent with those from the Semester 1 2007 analysis. From the Rasch model analysis of the Semester 1 and 2 2007 data, the values from the Threshold Map indicated that some items were easier for participants to affirm. As a matter of good testing psychology, the easiest items should be positioned at the beginning of the survey. Hence reordering of the items was recommended (see Version 4).

Implementation and retesting (Version 4)

In Semester 1 2009, the teaching survey was implemented for all coursework units using the same methodology as described in implementation of Version 3 and

retested with the items reordered (see Version 4). There were 14,989 surveys submitted. The number of UJ responses reduced to 1.7%; however, this reduction may not necessarily be connected to changed order of questions. The ordering of the thresholds within each of the seven items indicated that the students were logical and consistent in their choice of response for all items and that the items work properly in this sense. The eigenvalue for the first six components was again greater than 0.7, indicating that all questions should be retained. Once again, Rasch analysis confirmed previous findings.

In summary, repeated statistical testing showed that:

- The survey's rating scale questions is a reliable measure of students' perceptions.
- The response categories (Strongly Agree, Agree, Disagree, Strongly Disagree, UJ) work well, as intended.
- There is evidence that the survey measures multiple student attributes and not just one dominant trait.
- The question order seems to have no effect on students' responses.
- The results should be reported as percentage agreement on each item.

Impact of the teaching survey on unit survey response rates

Within the online eVALUate system; students can only give feedback on their teachers using the teaching survey once they have submitted the unit survey. It was hypothesised that appending the teaching surveys to unit surveys was a major factor for driving university response rates. This hypothesis was tested by analysing unit survey response rates: units with a teaching survey appended, and units without any teaching surveys appended. The mean response rate for units with and without teaching surveys was calculated for Semester 1 and 2, 2007–2010 (see Figure 1).

Semester 1 2007 was the period when the teaching survey (Version 3) was first fully implemented at Curtin. The mean response rate across units with and without teaching evaluations appended was compared using non-parametric Mann-Whitney U-test, for each semester. At 5% levels of significance there was sufficient evidence, for each semester to conclude that units with teaching evaluations attached register higher response rates on average ($p = 0.0$, for all semesters). The mean response rate for units with a teaching evaluation was between 6.8 and 8% more than for units without teaching evaluation in each semester event with the exception of Semester 1 2008 (3.9%).

Discussion and conclusions

The eVALUate teaching survey has undergone repeated statistical testing and the results confirm that the survey continues to be valid and reliable. The survey measures multiple student attributes and not just one dominant trait; this finding is consistent with the findings of previous research on student evaluations of teaching surveys (Bursdal and Harrison 2008; Marsh 1987; Marsh and Hocevar 1991). The teaching survey is a simple tool which reports students' agreement with items related to teacher characteristics. The final and implemented version of this survey
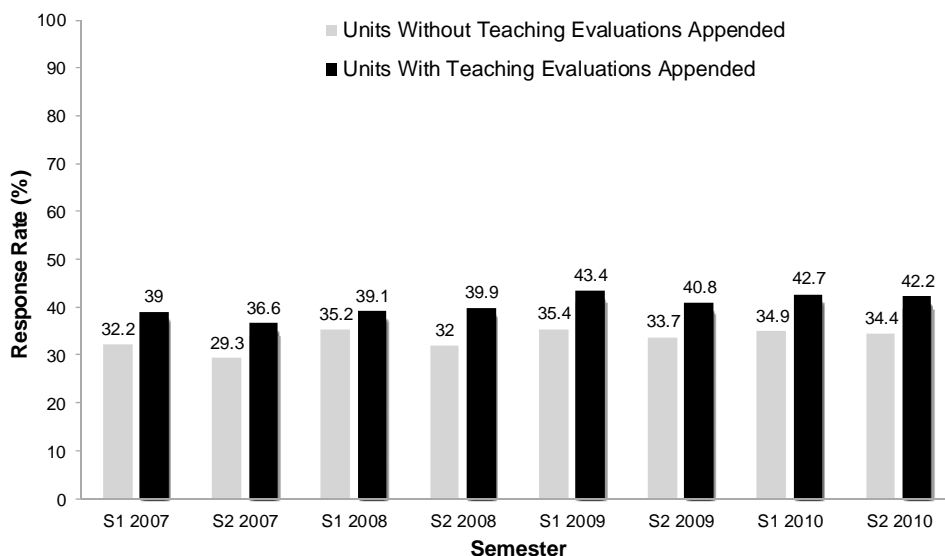
Figure 1.   Mean response rate for units with and without teaching evaluations.

comprises seven quantitative items, each of which has a brief explanatory for clarification. The items ask students to indicate their level of agreement. Students may indicate Strongly Agree, Agree, Disagree, Strongly Disagree or UJ for each item. Two qualitative items ask students to comment on [the teachers'] strengths and how they think [the teacher] might improve the teaching and learning in the unit.

Through the development of items in the teaching survey, Item 4 (provides useful feedback) attracted the highest percentage of UJ responses. This finding was also noted in the item about feedback in the unit survey. Investigation of students' qualitative comments confirmed that this is the area of concern for the University. Some students indicated they are unclear as to whether the feedback is useful and others believe the amount of feedback they receive is insufficient. Investigation and monitoring of students' perceptions about feedback is ongoing.

More recent research on excellent teaching dimensions and teaching evaluation systems support the items included in the teaching survey. A major review and analysis of surveys, mainly from North America, identified 42 possible teaching dimensions structured under six categories: (1) Teacher predispositions/personality; (2) Course preparation and organisation; (3) Approaches to teaching and teaching strategies; (4) Quality of learning outcomes; (5) Learning climate; and (6) Assessment (Abrami, d'Apollonia, and Rosenfield 2007). The eVALUate teaching survey items are all identified within categories 1, 3, 5 and 6. A recent system analysis of teaching surveys employed in 38 Australian institutions established that there were two distinct groupings of questions used for student evaluations: questions about the lecturer and questions about the student and their learning (Davies et al. 2010). Davies et al. (2010) classified these teacher survey items based on their own classification taxonomy, all of which were amongst those identified by Abrami, d'Apollonia, and Rosenfield (2007). All seven items in the eVALUate teaching survey relate to those identified by Davies and others; six items were grouped in the teacher

related items [appears knowledgeable, is enthusiastic, well organised, communicates clearly, is approachable (refers to availability to consult with lecturer), effective teacher], and one in the student learning group (provides useful feedback).

Teacher dimensions that have demonstrated increase in student learning outcomes and achievement include teacher: organisation, enthusiasm, those who motivate students and stimulate interest, possess a deep knowledge base, effectively communicate and demonstrate respect for students (Chalmers 2007; Gibbs and Coffey 2011). Items which correlate most highly with student achievement are teachers' preparation and course organisation, teachers' clarity and ability to be understood and, to a lesser degree, teacher enthusiasm or stimulation of interest (Feldman 2007). Effective teaching characteristics identified by students and award winning teachers are consistent with those included in the eVALUate survey (Feldman 1996, 2007; Pan et al. 2009; Reagan 2009). Observational research into the study of highly rated teaching behaviours in face-to-face teaching experiences identifies similar characteristics including communication skills (expressiveness, clarity, speech quality and interaction), organisation and interest (Murray 2007). Whilst there is considerable variability across Australian universities in item wording, items in the eVALUate teaching survey are consistent with these dimensions identified as commonly being used in Australian (Barrie, Ginns, and Symons 2008). The major point of difference for the items in eVALUate relate to their wording: the teaching survey asks students to give feedback on whether the teacher characteristics help them learn.

In general, statistical analysis showed that percentage agreement figures are very positive but sufficiently discriminating to indicate areas that need attention. A limitation of this study is that, whilst validation of the survey has been undertaken on progressively larger samples, the teaching survey did not sample all teachers at Curtin. In 2008, Curtin revised its performance review procedures to include a requirement for all teaching academics to undertake at least one teaching survey per annum to inform staff development needs.

The number of teaching evaluations requested at Curtin is increasing annually. In Semester 1 and 2, 2010, 1919 teaching evaluation requests were made in eVALUate and university-wide response rates for the unit survey are now 45–46%. This increase in usage of the teaching evaluation survey (which is appended to the unit survey) has resulted in the increased unit response rates, a key performance measure for many institutions. Teachers are critical in driving response rates to student evaluations as they can promote and educate students through their interactions, and close the feedback loop to students (Tucker and Pegden 2010).

A renewed focus on performance-based funding in Australian HE, driven by government policy, has resulted in changes in numerous Australian universities to their evaluation instruments (Shah and Nair 2012). To our knowledge, the eVALUate surveys are the only instruments currently used in Australia that have undergone rigorous statistical validation. Student feedback on teaching provides an important source of data for the evaluation of teaching effectiveness and the impact of professional development programmes. The adoption of this valid teaching survey by other institutions will allow for cross-institutional research and benchmarking.

The eVALUate teaching survey is now used, along with other sources of information, for: individual improvement and to inform teaching practice (self-reflection), for rewarding teaching staff in a system known as the Teaching Performance Index, teaching award applications, academic promotion and for the

identification of professional development needs in performance reviews. This use of data is consistent with many universities in Australia (Barrie, Ginns, and Symons 2008). If the aim of teaching is 'to make student learning possible' (Ramsden 1992), then the eVALUate surveys, in concert, aim to gather and report students' perceptions of what enhances their learning: aspects of units as well as their own motivation and engagement (both captured in the unit survey), and the teacher characteristics known to lead to more effective learner achievement. Together, these surveys have been effective and efficient drivers for improving teaching and learning across the institution.

Note

1. If there are no teaching evaluation requests within this unit, the following text appears: 'No teachers within this unit have requested an evaluation'.

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Appendix 1: Versions of the eVALUate teaching items and the eVALUate teaching survey

Version 1 and 2 teaching items

1. The teacher communicated effectively
2. The teacher was enthusiastic about teaching the subject
3. The teacher seemed knowledgeable in the subject area
4. The teacher seemed sensitive to students with learning difficulties
5. The teacher showed respect for students as learning partners
6. The teacher was reasonably accessible for help
7. The teacher used teaching practices which helped my learning
8. The teacher seemed to reflect on how student learning could improve

Version 3 and 4 items

1. Is well organised
   The teacher has material prepared on time, is punctual and structures activities in ways that help learning.
2. Communicates clearly
   The teacher is easy to understand in face-to-face, online, written and other formats and explains concepts clearly.
3. Is approachable
   The teacher encourages students to ask questions and seek help.
4. Provides useful feedback
   The teacher provides timely and helpful feedback so you can learn.
5. Appears knowledgeable in this subject area
   The teacher seems to have a good understanding of the subject.
6. Is enthusiastic in teaching this unit
   The teacher makes the subject interesting and conveys his or her enthusiasm for the subject.
7. Is an effective teacher.
   Overall, this teacher helps you to learn.

Qualitative items

8. Please comment on [the teacher]'s teaching strengths.
9. Please comment on how you think [the teacher] might improve the teaching and learning in this unit.

Version 5

Quantitative items with the following rating scale (Strongly Agree, Agree, Disagree, Strongly Disagree or Unable to Judge. *Explanatory text in italics appears online by default*).

[The teacher's name appears here]:

1. Appears knowledgeable in this subject area
   The teacher seems to have a good understanding of the subject.
2. Is enthusiastic in teaching this unit
   The teacher makes the subject interesting and conveys his or her enthusiasm for the subject.
3. Is well organised
   The teacher has material prepared on time, is punctual and structures activities in ways that help learning.
4. Communicates clearly
   The teacher is easy to understand in face-to-face, online, written and other formats and explains concepts clearly.
5. Is approachable
   The teacher encourages students to ask questions and seek help.
6. Provides useful feedback
   The teacher provides timely and helpful feedback so you can learn.
7. Is an effective teacher.
   Overall, this teacher helps you to learn.

Qualitative items

8. Please comment on [the teacher]'s teaching strengths.
9. Please comment on how you think [the teacher] might improve the teaching and learning in this unit.

Student evaluation surveys: anonymous comments that offend or are unprofessional

Beatrice Tucker

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Student evaluation surveys: anonymous comments that offend or are unprofessional

Beatrice Tucker

Abstract   Student comments are routinely collected in university evaluation surveys for the purpose of improving teaching and learning. Whilst student comments provide valuable insights into their experiences, there is limited published research reporting the extent to which student comments are offensive and professional. The aim of this study was to investigate the number of student comments that were identified as being offensive or unprofessional in an online unit evaluation survey collected in a semester in 2010 from an Australian university. One person read 30,684 comments taken from 17,855 surveys and identified comments considered to be abusive or unprofessional. Comments were categorised as either abusive or unprofessional and by the intended target (that is, teacher, unit, resource). Thirteen abusive comments (0.04 % of the sample) were identified. Five abusive comments were directed at the teacher and eight were targeted at teaching and learning experiences. Forty-six comments (0.15 % of the sample) were identified as unprofessional. Of these, seven comments were directed at the teacher and 34 were about units. This suggests that the vast majority of students do not abuse the privilege of giving anonymous feedback. Strategies identified in this paper to educate students and give appropriate feedback can be adopted by universities to minimise offensive comments. Universities can educate students and teachers in appropriate and professional ways of working together, in providing professional feedback to improve the student experience in teaching and learning and to support and mentor teachers in their academic careers.

Keywords   Student evaluation · Student attitudes · Survey · Qualitative research · Students' perceptions

Introduction

The notion of students having a voice and giving feedback on their teachers and units is not new. Early references indicate that students have been expressing their views in ancient

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times in Antioch in the time of Socrates (Marsh 1987) and in medieval periods (Knapper 2001). Traditionally, evaluation systems were more commonly used to inform the improvement of teaching and learning. However the establishment of external quality assurance bodies (particularly in the UK and in Australia), and the ever-increasing requirement for quality assurance and public accountability, has seen a shift in the use of evaluations systems including their use for performance funding, evidencing promotions and teaching awards (Meade and Woodhouse 2000; Nilsson and Wahlén 2000; Lecky and Neill 2001; Massy and French 2001; Hendry and Dean 2002; Scott and Hawke 2003; Chalmers 2007; Barrie et al. 2008; Arthur 2009; Shah and Nair 2012).

A plethora of literature has been published about students' rating systems, student evaluation instruments (focusing on their dimensionality, reliability, validity and usefulness), the dimensions of teaching effectiveness, student and teacher bias in questionnaire responses and the identification of excellent teaching and teachers (Marsh 1982, 2007; Abrami et al. 2007; Theall and Feldman 2007). Much of the research has been conducted in the US, Australia and Europe (Hirschberg et al. 2011) and numerous reviews provide a synthesis and critical review of the literature (see for recent reviews Richardson 2005; Perry and Smart 2007; Hirschberg et al. 2011; Alderman et al. 2012; Benton and Cashin 2012; Spooren 2012). However, there is a lack of published research world-wide on the quality of student feedback or on what students say. Studies investigating the correlations between written comments in open ended items and quantitative items of student evaluation questionnaires have reported mixed findings. Braskamp, Ory and Pieper (1981), in a study of 14 classes, found high correlations (0.9 and higher) between Likert scale ratings to student questionnaire items and written student comments. In contrast, Alhija and Fresko (2009), in a study of 3,067 questionnaires collected from 198 undergraduate units, found that students provided feedback on topics not captured by the questions posed reporting correlations between 0.2 and 0.5.

Whilst nearly all universities collect vast amounts of student feedback using evaluation instruments including student comments, there are limited tools available for analysing the qualitative feedback. New research is emerging in the role of text mining or educational analytics for analysing qualitative data in student evaluations (Campbell et al. 2007; Chen and Chen 2009; Jordan 2011). Text mining is an automated process that identifies relationships between texts to reveal patterns, frequency, and predicts the probability of relationships with other words. A tool called CEQuery, developed to analyse the graduate Course Experience Questionnaire (CEQ) comments (Scott 2005) is currently being used in Australia by some universities to analyse student evaluation comments (Oliver et al. 2006). CEQuery automatically classifies comments into five main domains (Outcomes, Teacher, Course Design, Assessment, and Support) and 26 subdomains. Others report using SPSS Test Analysis for Surveys to analyse qualitative data (Oliver et al. 2006; Pan et al. 2009). The CEQuery dictionary has been modified to suit the analysis of student comments at the unit level (Oliver et al. 2006). As there are only few tools available for efficiently analysing comments, this may account for the limited research in the field.

Student evaluation instruments typically include one to five qualitative items (most often three items) asking students about the most positive aspects of a unit and how it might be improved (Abbott et al. 1990; Sheehan and DuPrey 1999; Abrami et al. 2007; Oliver et al. 2008). This type of question is designed to assist in quality improvement of teaching and learning of a unit. More recently, there has been a shift in the focus of student evaluations and some suggestions have been made to change the wording of qualitative items to ask students about the process of their learning and intellectual development (Hodges and Stanton 2007).

Student comments provide valuable insights into the student experience (Braskamp et al. 1981; Lewis 2001; Zimmaro et al. 2006; Oliver et al. 2007; Alhija and Fresko 2009). It is generally accepted that, whilst online questionnaires generate lower response rates, students write more comments and longer comments in this medium when compared with paper-based questionnaires (Sorenson and Reiner 2003). Moreover, students tend to write more positive comments than negative comments in unit evaluation questionnaires (Braskamp et al. 1981; Sheehan and DuPrey 1999; Hardy 2003; Zimmaro et al. 2006; Oliver et al. 2007; Jordan 2011). Zimmaro and colleagues noted that the negative comments were more specific, focusing on aspects of the unit whereas the positive comments were more general in nature.

Despite the frequency of positive comments, student feedback continues to be a source of anxiety for some academics especially when they perceive the comments are unjustified, not constructive or cruel (Jordan 2011). Student feedback often reveals intellectual challenges faced by students in their learning that provide insights into scholarly teaching (Hodges and Stanton 2007). Limitations to qualitative feedback include: irrelevant statements and hurtful remarks and low numbers of unhelpful comments (Oliver et al. 2007; Jordan 2011). Jones et al. (2012) outlined the legal issues that potentially may be associated with student comments including: defamation; breach of duty of care, trust and confidence; and breach of right to privacy. In addition student comments, if used improperly may result in the dismissal of academics or may, at worst, harm their reputation (Jones et al. 2012). In Australia, students can give feedback on their teaching and learning experiences using unit and teaching evaluation instruments which are either separate questionnaires or are combined (Barrie et al. 2008). This study, of an Australian university, provides insight into the extent to which student comments are offensive and unprofessional and outlines the practices that are employed to educate students on giving appropriate feedback and manage the publication of student comments.

Background information

Curtin University, a large Western Australian university of over 47,000 students operating out of 16 locations, has used eVALUate, an online student evaluation system for gathering student feedback on their learning, since 2006 (Tucker 2013a, b). The system uses two separate validated and reliable instruments: a unit and a teaching survey (Oliver et al. 2008; Tucker et al. 2012). The eVALUate unit survey comprising 11 quantitative items ask students' their perceptions of what is helping them achieve learning, their overall satisfaction and what they bring to the learning in terms of their motivation and engagement. The eVALUate unit survey also includes two qualitative items asking students to say what were the most helpful aspects of the unit and how the unit might be improved. The quantitative results of the unit survey instrument are available online to all students and staff in the university however the student comments are only available online to the unit coordinator and the head of school (Tucker et al. 2013). These reports are available online immediately after student results are ratified and become available to students (around 2 weeks after the evaluation period). A separate questionnaire, called the eVALUate teaching survey, is used to collect student perceptions of the teacher and their teaching. The feedback on the teaching survey instrument is only available to the teacher who requested the survey.

Within the online eVALUate survey system, students are prompted to give professional feedback and are given examples on how to be constructive. The advice to students is:

> Be precise: Provide focused feedback that will allow us to determine what is working well for you, as well as what is not working so well.
>
> Be specific: Wherever possible, try to provide examples to clarify your comments. Explain clearly why you are being complimentary or critical and be constructive by providing suggestions for how you think a unit could be improved.
>
> Be professional: remember that your feedback will be used to improve your course. Provide feedback on how the unit designers can better help you achieve the learning outcomes. In keeping with the University's Guiding Ethical principles, comments which could be considered offensive, abusive, racist or sexist are unacceptable.

In 2006, an analysis of all student comments collected from the unit survey instrument obtained (n = 29,491) from a Semester 1 evaluation event revealed ten abusive comments, that is, containing offensive language or personal insult (this represented 0.03 % of the sample). At that time, the University Student Charter and Guiding Ethical Principles guided students and staff behaviour. While the ten identified comments in 2006 were not acceptable or condoned, the University Teaching and Learning Committee recommended that there were too few abusive comments to warrant removing students anonymity in the system. There was and remains a widespread belief that loss of anonymity will be a major disincentive for student participation, and response rates will decline.

More recently, and following the release of evaluation reports in 2010, anecdotal evidence suggested that there had been an increase in abusive comments, and that this was not in keeping with expected behaviours described in the University's Code of Conduct. This Code requires that all parties, including all academic and general staff; visiting, honorary and adjunct academics; contractors; and volunteers perform their duties professionally with respect, integrity, fairness, care, and without harassment, bullying or discrimination. The Code is explained in a 'Guide' which outlines the following statements in relation to the roles and responsibilities of staff in communicating professionally (by extension, it is fair to expect the same of students):

- do not use electronic messaging in an unprofessional manner;
- social networking—do not use inflammatory, racist or offensive language, and never upload offensive or explicit written, audio or video content; and
- discrimination and harassment—under this theme, the following examples of harassment were provided—insulting or threatening language or gestures; phone calls, letters or messages on electronic mail or computer networks that are threatening, abusive or offensive.

However, there is no explicit Code of Conduct for students. In its place, the Student Charter, developed in partnership between the University and the Student Guild, sets out the expectations and responsibilities of students. Students are expected to:

- inform themselves of, and comply with, all relevant laws, University Statutes, rules, by-laws, the University's Guiding Ethical Principles, policies and procedures relating to their rights as a student;
- behave in an appropriate manner within the learning environment, showing respect for both staff and fellow students at all times; and
- embrace and recognise diversity.

In 2010, the University also published a document titled 'Student Conduct: your rights and responsibilities' explaining students' rights, responsibilities, and the University's Values (integrity, respect, fairness and care). The following is information provided to

students on communicating using computers "You must not: stalk, bully or harass others" and on cyber bullying the information relates to "sending cruel text or email messages". Although this document is disseminated to all students, the extent to which students read and understand the information is unknown. Similarly, the extent to which students know about or read the Student Charter is unknown.

The aim of this study was to investigate the number of student comments that were identified as being offensive or unprofessional in online unit evaluation instrument collected from an Australian university.

Methods

In order to determine whether there is an increase in the number of offensive comments in eVALUate from 2006, an analysis using the same methodology as was undertaken in 2006 was undertaken from one evaluation event in 2010 (the Semester 2 event). The total number of comments in the data was 44,876. As there were more student comments in this 2010 analysis, a randomised sample of two-thirds (30,684) comments, taken from 17,855 unit survey responses, was included in the analysis to be comparable to the 2006 sample. All comments were completely de-identified so that there was no way of knowing which student had made any comment. One person, an individual appointed at random, read all the comments and highlighted any comment that contained any word considered to be offensive or unprofessional. The person signed a confidentiality agreement specifically related to the sensitive nature of this task and ethics approval was granted from the University Ethics Committee. Comments were considered abusive if they were contrary to the spirit of Curtin's Guiding Ethical Principles and contained: offensive language (e.g. swear words); racist, sexist or personally abusive terms; and allegations of misconduct or criminal behaviour. In response to staff concerns, raised formally at university meetings and informally at professional development sessions for academics, a decision was also made to identify comments which were considered unprofessional (that is, language or terms which most would consider not abusive but inappropriate in a professional setting e.g. crap, damn).

Comments were categorised as by level of inappropriateness (abusive or unprofessional) and by the intended target (e.g. teacher, unit, resource). In addition, a CEQuery analysis was undertaken to automatically classify the comments into five domains [Outcomes, Teacher (staff), Unit Design, Assessment, and Support] and 26 subdomains using a custom-tailored dictionary (as shown in Table 1). This analysis revealed the topics most commonly talked about by the students overall and in response to the qualitative questions in the eVALUate unit survey: the *Most helpful aspects of the unit* and *How the unit might be improved.*

Results

The total number of completed evaluation questionnaires submitted in the evaluation event was 43,084, a university-wide response rate of 43.3 %. Overall there was higher participation by female students (females = 47.5 %; males = 40.2 %), external students (external = 41.5 %); internal 38.1 %) and Australian students (Australian = 45.3 %; International 42.4 %). External students are enrolled in units requiring no face to face tuition (e.g. are fully online). Students aged 21–25 years were less likely to participate than

Table 1 The domains and subdomains within CEQuery

Outcomes	Teacher (staff)	Unit design	Assessment	Support
Intellectual	Accessibility and responsiveness	Practical-theory links	Relevance	Library
Work application/ career	Teaching skills	Relevance (to work/life/ discipline)	Marking	Learning resources
Further learning	Practical experience (current)	Flexibility/responsiveness	Expectations	Infrastructure/ environment
Personal	Quality and attitude	Methods of learning and teaching	Feedback/ return	Student administration
Interpersonal		Structure and expectations	Standards	Student services
Knowledge/skills				Social affinity/ support

students from any other age group (the age groups were 20 years and under; 21–25; 26–35; 36–45; and 46 years and over). The analyses also revealed that, for the quantitative items in the unit survey instrument, females and part-time students were more likely to agree with most items; these differences were only around 2 %. Greater differences (5–6 %) were reported in other groups: higher percentage agreement for items was reported by international students, students in older age groups, external students and students with higher semester weighted averages (that is, average grades). For the two qualitative items, 67.4 % included data in response to at least one qualitative item. Slightly more responses were made about the *Most helpful aspects of the unit* (55.5 %) than *How the unit might be improved* (51.5 %). Of the 41,906 unit survey responses, 64.1 % contained comments in response to at least one qualitative item. Students from Humanities and Health were more likely to provide comments (71.3 and 70.4 % respectively) than students from Science and Engineering (64.5 %) or Business (55.7 %). Table 2 shows the number of comments analysed from each faculty, the number of comments categorised as offensive or unprofessional and the target of the comment.

The table shows that, in all, 12 (0.04 %) abusive comments were identified in this sample. Five abusive comments were directed at teachers and seven were targeted at teaching and learning experiences. This suggests there is a very small, albeit insignificant increase in abusive comments in eVALUate since 2006. Forty-four comments (0.14 % of the sample) were identified as unprofessional. Of these, seven comments were directed at the teacher and 34 were about units (four of these were about the textbook).

Analysis of the comments was not always straightforward: one comment, for example, referred to a teacher swearing to students:

"A reduction in the amount of times the tutor said [swear word removed] would aid in not distracting students from the tutorial topic being presented."

Another comment uses inappropriate language to report a positive experience with the unit:

"Its perfect. Don't [swear word removed] with it."

Both comments are included in Table 2.

The top five topics students commented most frequently about were the methods of teaching and learning, learning resources, teacher quality and attitude, assessment standards and teacher accessibility. For the *Most helpful aspects of units*, students commented most frequently on methods of learning and teaching in unit design, the learning resources, the quality and attitude of teachers, structure and expectations in unit design, teacher accessibility and responsiveness, standards and relevance of assessment and teaching skills. For the item on *How units might be improved* students commented most frequently

on methods of learning and teaching, learning resources, structure and expectations of units, assessment standards and the quality and attitude of teachers.

Discussion

The findings of this study are consistent with that undertaken in 2006 (Oliver et al. 2007). Subgroups of students are more likely to participate in providing feedback using unit evaluation questionnaires; particularly female students, international students, those in older age groups and students with a higher semester weighted average. The findings that females were more likely to agree with most items, as did part-time students, international students, students in older age groups, external students and students with higher semester weighted averages are consistent. However, differences in student perceptions for subgroups are declining as student participation in evaluation questionnaires increases (Pegden and Tucker 2009).

Student comments are collected in large numbers by a university but the number of people who read and review the comments is often restricted. For example, at the University, the unit evaluation questionnaire comments are only available to the unit coordinator and head of school. The comments, usually 138 characters in length (many 350 characters of length) (Oliver et al. 2007) are used for course review and for research into specific topics of strategic interest to university executive (Tucker 2013a, b). These comments are analysed using CEQuery and SPSS Text Analysis for Surveys and are only reported under the themes generated using these tools (Oliver et al. 2006; Tucker et al. 2012, 2013; Tucker 2013a, b).

The results of this study show that overall; students' comments are rich sources of feedback, commenting most frequently about the methods of teaching and learning. It is particularly notable that three of the seven most frequently commented on *most helpful* subdomains refer to teachers. Nevertheless, a very small number of comments made by students in unit evaluation questionnaires do contain words that are abusive and unprofessional. Abusive and unprofessional comments appear to be isolated and unsupported in other comments within the same unit. This suggests that the vast majority of students do not abuse the privilege of giving anonymous feedback. The findings of this study suggest that, on the whole, the current approach (on-going education on how to give professional feedback) is successful and that universities have a significant role in guiding the values and behaviours of staff and students. It is recommended that guidance on giving professional feedback should routinely be outlined in student publications regarding their rights, responsibilities and conduct. Professional development for all staff and students on communicating appropriately and professionally should be on-going and relentless to minimise the impact such incidents may have, including the possible legal implications highlighted by Jones et al. (2012).

One comment revealed that the teacher was using abusive comments in class and hence this comment could be considered as not being abusive. This comment reveals that the Code of Conduct was not adhered to by the teacher. It also highlights that the identification of abusive words alone, and possibly their removal, provides little insight to the problem being faced by this student. This case highlights the importance of the student voice in understanding their experience in university.

The unit coordinator and head of school are provide with guidelines, reinforced within the evaluation policy and procedures, on how they are expected to share the eVALUate

Table 2 Comments categorised by level of inappropriateness and by the intended target

Faculty (n = comments analysed)	Level of inappropriateness	Target	No. of comments
Business (n = 9,077)	Offensive	Teacher	2
	Offensive	Unit resources	1
	Offensive	Unit assessment	1
	Total abusive comments		4
	Unprofessional	Teacher	5
	Unprofessional	Unit	5
	Unprofessional	Unit textbook	1
	Unprofessional	Unit assessment	1
	Total unprofessional comments		12
Health (n = 8,558)	Offensive	Student	1
	Total abusive comments		1
	Unprofessional	Unit assessment	2
	Unprofessional	Student	1
	Unprofessional	Unit resources	1
	Unprofessional	Unit textbook	1
	Unprofessional	Unit	1
	Total unprofessional comments		6
Humanities (n = 5,929)	Offensive	Unit and department	1
	Offensive	Teacher	1
	Offensive	Unit	1
	Total abusive comments		3
	Unprofessional	Unit	10
	Unprofessional	Unit assessment	2
	Unprofessional	Teacher	1
	Total unprofessional comments		13
Science and Engineering (n = 6,182)	Offensive	Teacher	2
	Offensive	Unit	2
	Total abusive comments		4
	Unprofessional	Unit	6
	Unprofessional	Unit textbook	2
	Unprofessional	Teacher	3
	Unprofessional	Unit assessment	2
	Total unprofessional comments		13
University total (n = 30,684)	Grand total abusive comments		12
	Grand total unprofessional comments		44
	Grand total comments		56

results with their teaching staff and on their duty of care for their colleagues. These guidelines state that:

> You may share comments which are general in nature (that is, in which staff are not identifiable) with all staff teaching in the unit. Some comments, however, could

> identify particular staff. It is appropriate to pass on those comments (both positive and negative) to the named staff member only. Any comments, in which staff are named, are confidential to that staff member (and to those charged with the coordination and management of the unit). Misuse of data from eVALUate reports will be dealt with according to [relevant staff agreements].

> Student feedback which may be considered offensive or defamatory, (this includes racist, sexist, personal and abusive comments, and allegations of criminal activity) may NOT be passed on to any staff member, or any student, by either the unit coordinator or head of school/faculty. Under no circumstances will a comment be tracked to identify any student.

The swearing words identified in this analysis are frequently used in the context of social swearing, as well as in the media. They do not focus on religious matters, known as secular swearing; nevertheless, although the number of abusive comments is comparatively small, such swearing is absolutely unacceptable. Staff and students should never be expected to have to deal with anonymous abuse. By the same token, using anonymity to abuse others is a form of human weakness, and evidence from student comments suggests that teachers occasionally demonstrate the same unacceptable behaviour when they talk to students and give feedback, anonymous or otherwise.

A number of suggestions are often made by academics to mitigate the number of abusive and unprofessional comments. First, it has been suggested that we use software to remove swear words prior to the release of reports to the relevant coordinator. To date, we have been unable to source software that would be able to successfully remove words that are often spelt or annotated in creative ways. The manual reading and removal of comments is not feasible in such a large university as this would be both costly and would hinder the timely production of reports to teachers. A second suggestion has been to remove comments following the release of reports. This is a feasible option previously adopted within an evaluation system used within a school (Tucker et al. 2003, 2008). The following considerations based on the experiences of the author, should be taken into account prior to the removal of comments post publication. The comment should only be removed following scrutiny by a group, such as a committee, comprising student representatives. Clear criteria should be used to ensure words or comments are removed appropriately. It should be recognised that, the removal of words or comments post publication will not prevent the academic from seeing the comment or being offended by the comment.

Academics should be given strategies for interpreting reports, including the comments, as abusive or unprofessional comments are isolated and should be largely ignored. The academic should determine the proportion of negative to positive comments for interpretative purposes to assist them in determining if the comments are representative of the entire class or a small minority of students (Lewis 2001). Support and appropriate mentoring by peers and the head of school is essential. In the case where a comment is found to be abusive, it may be appropriate to have an approach whereby the students who make abusive comments forfeits their anonymity, and is identified. Such an approach would need to be thought through very carefully in terms of wording, definition of abusive comments, and any unintended consequences of this approach.

In order for universities to decide on their approach, it is recommended that student comments be reviewed as part of the institution's review processes (Chen and Chen 2010). One objective of a university education is to prepare students to evaluate their own education and make valid judgements (Jordan 2011). Educating students to give professional

and constructive feedback on their experiences is essential in preparing students for self-reflection and evaluation.

Conclusion

This study of over 30,000 student evaluation comments revealed that students commented most frequently about the methods of teaching and learning. Teachers were frequently praised. A very small number of students (0.04 %) provided comments that contained swear words, some of which were directed at teachers, more at the teaching and learning experiences. A larger number of students provided comments that were identified as unprofessional (0.15 % of the sample). It is recommended that universities adopt strategies to educate students and teachers in appropriate and professional ways of working together, in providing professional feedback to improve the student experience in teaching and learning and to support and mentor teachers in their academic careers. Where student comments are unprofessional or abusive, academics should be provided with strategies for interpreting student evaluation reports so that these isolated comments do not detract from the rich feedback that students provide for improving their teaching and learning experience.

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8

Course Evaluation on the Web is a dynamic, Web-based system for student reflection on learning, instructor reflection on teaching, and program management.

Course Evaluation on the Web: Facilitating Student and Teacher Reflection to Improve Learning

Beatrice Tucker, Sue Jones, Leon Straker, Joan Cole

Excellence in teaching and learning is not easily achieved, and it requires more than just a passing participation in an improvement activity (Weimer, 1990). To focus on achieving excellence, educational institutions must place high value on both the process and the outcomes of teaching and evaluation.

Good-quality feedback on courses that informs instructors about student perceptions of their teaching is often difficult to obtain. Lack of student feedback may leave instructors relying on their own perceptions of teaching successes and difficulties, which may be different from student perceptions. A cycle of evaluation and improvement based on student feedback is seen as essential to the process of quality improvement (Brown, Race, and Smith, 1997). The improvement of teaching and learning is likely when teachers are supported through a process of reflective dialogue based on student feedback (Brockbank and McGill, 1998).

Traditional Feedback Systems

There are many methods of collecting course feedback. The traditional paper-based method provides good quantitative and qualitative feedback, but it is often time-consuming (for both students and teachers) and laborious to collate and interpret. Teachers who manage several courses often find

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it difficult to collate paper-based feedback in a timely manner—if at all—in order for the information to be useful in facilitating a change in teaching and learning practices.

Although traditional feedback systems generally focus on teaching performance, they neither recognize nor evaluate the student contribution to learning. Educators may have immediate access to student feedback using various course evaluation systems; however, there is typically no mechanism for reporting back to students about changes that may (or may not) occur. Students report frustration in spending time and effort to provide evaluative feedback when they see no apparent outcome.

A Broader View of Evaluation

Educators have an expectation of students' reflective practice, which implies that students have a responsibility for their own learning (Brockbank and McGill, 1998). Course content design can encourage some higher-order learning. However, transformative learning of relativist or constructed knowledge (Brockbank and McGill, 1998) can be facilitated by students reflecting on their own learning through participation in course review. Their participation helps students develop critical ability (Brockbank and McGill, 1998). In addition, they learn from observing the reflective practice modeled by teachers.

The School of Physiotherapy at Curtin University of Technology in Perth, Western Australia, recognizes that learning is influenced by many variables. Therefore, evaluation of teaching and learning should focus on changes in knowledge, skills, attitudes, and behavior. Figure 8.1 presents a model of the authors' understanding of the aspects that influence learning within a "learning community." This model suggests that student learning is a result of the interaction among several key elements: the students themselves, their student peers, the subject learning materials, and the faculty. The interaction is further influenced by ways these elements are managed and by the school's physical and social environment within the broader university and geocultural environment.

In 1999, physiotherapy faculty at Curtin University developed Course Evaluation on the Web (CEW, pronounced "cue"), a Web-based system that broadened the possibilities for effective evaluation within a learning community. CEW was initially piloted in one class with one hundred students. Since that time, CEW has been developed and used annually in sixty entry-level courses and twenty postgraduate courses. Five hundred students, fifty teachers, and ten program managers have participated in the CEW process.

The School of Physiotherapy uses CEW for student reflection on learning, instructor reflection on teaching, and administrator response to student feedback to improve programs. CEW is used to monitor student satisfaction with a variety of aspects of their educational experience. CEW is part of a

Figure 8.1. The Learning-Community Model
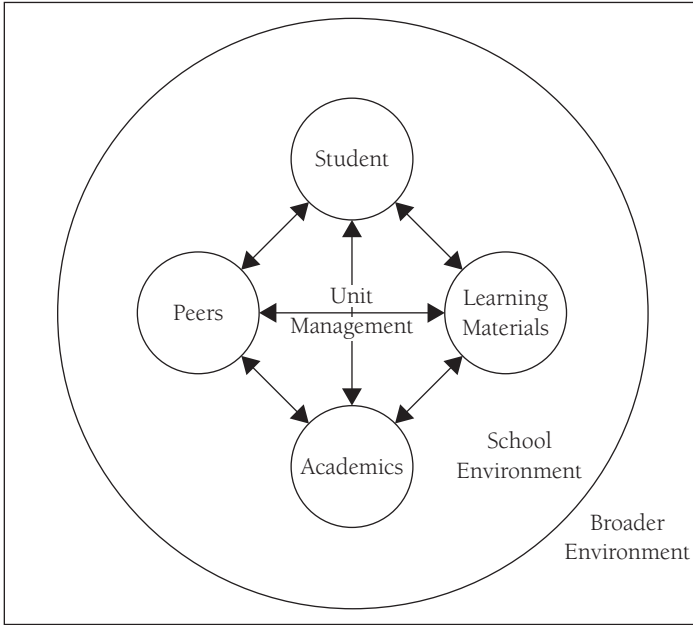
process of continuous quality improvement that involves the entire learning community in order to enhance the quality of teaching and learning.

University programs need to demonstrate their accountability and are often audited by external agencies. As a result, they are required to demonstrate their quality improvement processes and to monitor their efficiency and effectiveness. It is essential to have a timely and efficient mechanism that responds to student feedback, facilitates course and program changes, and helps demonstrate accountability. Australian universities typically use the Graduate Careers Council of Australia Course Experience Questionnaire (CEQ) (http://www.gradlink.edu.au/gradlink/gcca/index.htm) to evaluate student satisfaction with their programs in the following areas of good teaching: clear goals and standards, appropriate workload and assessment, development of generic skills, and overall satisfaction. CEQ data are usually received by schools nearly two years after a cohort has graduated, making it difficult to identify problem areas within courses or programs and to manage factors that affect student satisfaction. Waiting for CEQ scores until after students have graduated is untenable; this adversely affects recruitment and enrollment of both international and local students and, hence, the financial viability of programs.

Conversely, the CEW online system facilitates timely data collection, feedback, and evaluation using a Web-based interface. CEW provides the following benefits to students, teachers, and program administrators:

Students: CEW provides quick, anonymous feedback on the quality of courses or programs; it encourages students to reflect on their learning and to contribute to educational improvement.

Teachers: CEW provides rapid online access to student perceptions of their courses or programs; it encourages instructors to reflect on their teaching and to adopt the idea of continuous quality improvement.

Program administrators: CEW provides online access to a concise overview of student perceptions of the program, it encourages program administrators to identify areas where improvement is needed, it assists them in determining teacher development needs to improve teaching and learning and it provides information to determine appropriate resource allocation and to evaluate programs.

CEW Feedback Instrument

CEW incorporates all aspects of the learning-community model to evaluate teaching and learning. In the course and program-to-date instruments, students indicate their agreement with a variety of statements using a five-point Likert scale. Students respond to items in the following areas:

Students' own characteristics (for example, intellectual capacity, work and family responsibilities, knowledge)

Students' perceptions of their peers (for example, intellectual capacity, group dynamics)

Students' perceptions of their teachers (for example, knowledge, attitudes)

Course learning materials (for example, textbook, electronic resources)

Course management (for example, clarity of expectations, sequencing of material, type of assessments)

School environment (for example, physical facilities, psychosocial factors)

Broader environment (for example, university administrative efficiency, student support services, student's family and home, culture and lifestyle of the city).

In addition, qualitative data are collected from the following areas: best and poorest aspects of the course and program, suggestions for change, and other comments.

CEW Process

The CEW process consists of a Web-based feedback loop involving reflection and communication from students to teachers and administrators—and back again to students. Reflection is encouraged during and at the end of each semester by both students and teachers. A brief description of the main aspects of the CEW process follows.

A CEW management team consists of teacher and student representatives who meet regularly to review the instruments and mechanisms, negotiate participation with teachers and students, evaluate effectiveness, and implement changes as appropriate. Students agree to provide feedback as a compulsory course requirement. In exchange, teachers agree to inform students about changes that may be made as a direct result of student feedback. Student representatives actively encourage their peers to consider giving feedback on an ongoing basis and remind them of evaluation deadlines.

The CEW management team orients and teaches students, instructors, and program managers about the CEW system—its principles, goals, and functions. Professional development of both teachers and students is accomplished through the integration of formal teaching sessions and mentor support. A member of the CEW management team leads an educational session for new students on how to provide quality feedback.

Students and teachers have access to previous feedback and response reports about enhancements to teaching and learning through the closed community Web site. New teachers are mentored through their first use of the system by shadowing experienced teachers. The motivation for teacher and student participation in CEW is the belief that the process will result in improved teaching and learning. In recognition of the mutual benefits, teachers and students have made an ongoing commitment to use CEW to improve teaching and learning outcomes.

Each semester, student representatives of the CEW management team ask students to reflect on their learning at regular intervals (typically every two weeks). Students keep a record of their thoughts and comments on specific aspects of their programs using specially designed forms packaged as part of their learning materials. Teachers are also reminded regularly to reflect on their teaching and to record their thoughts in a course journal.

After their exams at the end of each semester, students are asked to provide online feedback on the subjects they studied and on their overall experience in the program to date. CEW delivers to students the appropriate feedback instruments, provides a password-protected interface for student feedback, and enables students to monitor feedback they have provided and feedback that is still required. The instruments for evaluating courses and programs are Web based, enabling students to provide their feedback from anyplace where they have access to the Internet. The identity of the respondents is encrypted to maintain student anonymity throughout the whole process.

The program-to-date feedback instrument measures the students' perceptions of their experiences to date in the School of Physiotherapy programs (Figure 8.2). It collects student ratings in the following areas: the school and broader environment, CEQ subscales, individual course satisfaction, and qualitative responses (for example, suggestions, other comments). From the items on the instrument, a score is automatically

Figure 8.2. The Course-to Date Interface
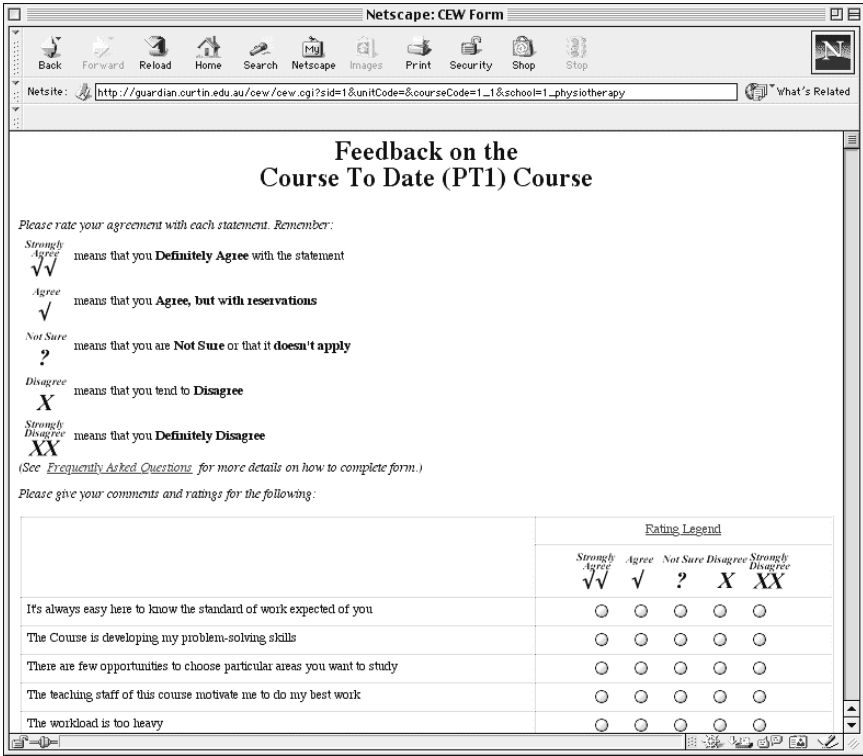
calculated for the following CEQ subscales of good teaching: emphasis on independence, clear goals and standards, appropriate assessment, generic skills, appropriate workload, and overall satisfaction.

Web-based student feedback provides results that are immediately available for processing and presentation to the respective teacher and administrator, who then begin the process of reflection. Because the students have agreed to provide feedback, a complete set of data is obtained. CEW conducts a frequency analysis on rating questions and generates a report with graphical representation of the distribution of rating scores on each question. Using key words, student comments are automatically sorted into appropriate categories to aid interpretation and analysis.

As part of the CEW process, teachers and program managers reflect on the ratings report, conduct further analysis on student comments, create a summary report of the student feedback, and prepare a response after discussion with a peer. This response provides an overview of the course, the teacher's perceptions of the best aspects of the course, and areas that require change. The teacher outlines whether he or she agrees with

Figure 8.2. (Continued) The Course-to Date Interface
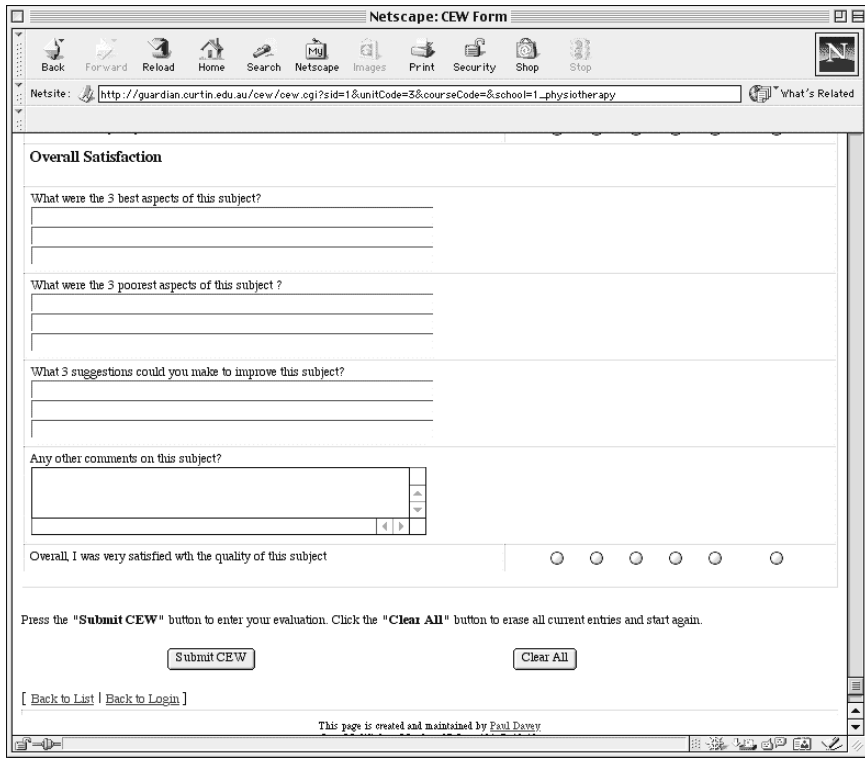
student perceptions and indicates which changes will (and will not) be made for the following year based on student feedback (and provides reasons for these decisions).

Once the summaries and draft responses are prepared, teachers discuss their feedback and proposed changes with a more experienced peer. This dialogue with peers is critical to the process of teacher reflection, and it is designed to be supportive, nonjudgmental, and nonthreatening. Instructors then share their ideas and proposed improvements with other teachers in the program. Such discussions include the following topics: strategies to improve teaching skills, evaluation strategies, development of appropriate resources, guidance in choosing appropriate teaching seminars within the university, and the opportunities for working with more experienced educators. The teacher and the more experienced peer then agree on the final changes that will be made to the course. This process focuses on peer mentoring and development to improve teaching skills; it is not simply a summative teacher review. Teachers value this opportunity to discuss ways to improve their teaching and their students' learning.

Closing the Feedback Loop

After the peer-review process, the course and program-to-date responses are communicated back to students. At that time, student representatives, teachers, and program managers review a summary of feedback, responses, and changes made as a direct result of student feedback in the subsequent semester. Copies of the ratings reports, summaries of student comments, and teacher and manager responses are posted to a secure learning-community Web site. On this Web site, students can see that their feedback has been heard and valued and that it has contributed to program improvements. Consequently, students maintain a high level of ongoing commitment to their role in the CEW process.

Benefits of Online Evaluation

There are many benefits of using an online evaluation system. Students, teachers, program managers, courses, and programs all benefit from the CEW process. Students have the opportunity to help improve their courses, teachers have accurate feedback to assist in improving their teaching, and program managers are able to identify excellent teaching and developmental needs to support the improvement of teaching. Finally, CEW provides an important mechanism for teacher accountability, including areas of student satisfaction with teaching and learning and evidence that course improvements are being made based on issues raised in the CEW process.

Student Reflection. CEW promotes improved student learning by engaging students in reflection during and at the end of each semester. Student perceptions of CEW have been evaluated by examining the quantitative and qualitative feedback provided by the CEW process. This includes the student representatives and also student focus groups comprising five to ten students in each year of each program (conducted by an external reviewer). After the first year of CEW implementation at the School of Physiotherapy, 63 percent of students reported that CEW encouraged them to reflect more on how they learned and how they were taught. Furthermore, 80 percent of students surveyed in 2000 believed that by giving feedback through CEW, they were improving the physiotherapy program.

Students highly valued the response reports they received about changes planned as a result of teachers receiving the students' feedback. They also said that CEW resulted in more discussion with teachers, especially about class content. Students also reported that the CEW process resulted in a more collaborative approach to learning and greater flexibility in teaching and learning (Student Survey 2000).

Teacher Reflection. During each semester, a report is circulated to all teachers that outlines student satisfaction with individual courses and provides a comparison with the previous year's data. This report provides

instructors with the opportunity to review their own performance in a course. It also helps them see how their courses compare with other courses taught within the School of Physiotherapy. If teachers find that their course is performing poorly compared with other courses, they can identify teachers whose courses are performing well and seek their assistance in reviewing their own course structure and materials. They may choose to collaborate with those teachers to develop new teaching strategies. In this way, teachers can select their own mentors to help them improve their teaching and their students' learning.

Reflective teaching practice is an ongoing, cyclical endeavor that Weimer (1990) describes as "tinkering." To support this tinkering, the School of Physiotherapy saw the need for changes in culture, dialogue, and information. According to Ramsden (1998), the academics' environment profoundly affects their work processes, morale, and productivity. The School of Physiotherapy has tried to create an appropriate teaching culture through various initiatives, including monthly teaching seminars and small teaching development grants.

The teachers' perceptions of the reflective practice supported by CEW have been evaluated using focus groups and a Teacher Climate Survey. This survey was conducted in 2000 and again in 2002 by an external reviewer. Academics reported high levels of student focus and positive attitudes toward reflection, including a 50 percent increase in the time spent on reflection. Compared with the Teacher Climate Survey of 2000, academics reported higher levels of organizational support (through CEW) for reflective practice. The Survey of Perceived Organizational Support (Eisenberger, Fasolo, and Davis LaMastro, 1990) was used to measure organizational support. Scores on this survey increased from 3.8 in 2000 to 4.5 in 2002 (out of a possible score of 5.0).

CEW has also improved many aspects of teaching-related practice and organizational behavior. Job Motivational Potential (Cook, Hepworth, Wall, and Warr, 1981), which considers richness of work (related to job satisfaction, motivation, performance, absenteeism, and turnover), was examined over a two-year period. There was a 25 percent increase in job motivation potential to the point where work was considered well above the level where there would be opportunities for further increases in job motivation potential (Ots, 2002). There were similar significant increases in faculty job satisfaction, both intrinsically (12.5 percent) and extrinsically (28 percent), using a fifteen-item scale developed by Warr, Cook, and Wall (1979). Moreover, satisfaction with teaching improved by 30 percent despite a marked increase in teacher workloads. Organizational commitment also showed an improvement of 14 percent. All of these indicators demonstrate that an online evaluation system that supports teachers provides many additional organizational benefits.

The results of these studies are supported by statements such as these from teachers who used CEW:

> CEW has had a major impact on the amount and quality of my reflection on my teaching. Having used the high-quality feedback students provide and benefited from the peer discussions, I cannot imagine teaching without CEW.
>
> [Using CEW], "I feel we all talk a lot more about teaching and how we can improve our courses. I think it's given us a much more customer focus and is a powerful evaluation tool for new courses. It provides us with the evidence of what we do well and what we need to improve on and discussion of the strategies we might use to do this.

Mentoring and Developing Teachers. Critical to the success of CEW as a mentoring tool is the willingness of senior teachers, including the head of school, to share their own negative feedback and difficulties and their struggles for solutions. In this way, a high degree of trust and support is developed among teachers who have become more likely to expose their limitations and to receive support for finding new ways of improving their teaching.

Another catalyst used for mentoring teachers is the "CEW Expo" held at the end of each year. These expositions provide a forum for teachers to share their experiences about what has worked well and what has not worked well in their courses. For example, teachers describe a problem identified through CEW and how solutions emerged through personal reflection, discussion with students, and the peer-review process. Some teachers present problems and the proposed solutions. Others present the problems and the range of solutions they tried—but which have not worked—and seek the assistance of the wider group in solving the problems. In this way, teachers share a collective responsibility for improving teaching and learning, rather than the responsibility lying with a single individual.

Program Management. Several common themes for teacher development needs are identified through the individual and group peer-review process. When several teachers require the same assistance, workshops are organized to address these specific needs. Program managers generate a report that outlines student satisfaction and perception of workload with each subject in each semester of the program. This report enables program managers to identify subjects of concern and broad program weaknesses at a glance, to examine the strategies that have been identified for subject improvement, and to provide teachers with support as necessary.

Program managers not only compare courses at one point in time, they also see how particular courses change over time. Likewise, students and academics are able to review how the course changes from one year to the next. The trend in course and year feedback and performance is plotted over time across the CEQ subscales. This demonstrates whether changes implemented have resulted in improvements in student satisfaction with their programs. Areas that are rated poorly are easily identified, and strategies for improvement are implemented and then reevaluated.

CEW feedback provides teachers and program managers with a mechanism to monitor changes in student satisfaction well before program

**Figure 8.3. Improvements in Teaching and Learning in Fourth-Year
Bachelor of Science Physiotherapy Course, 2000 to 2002**
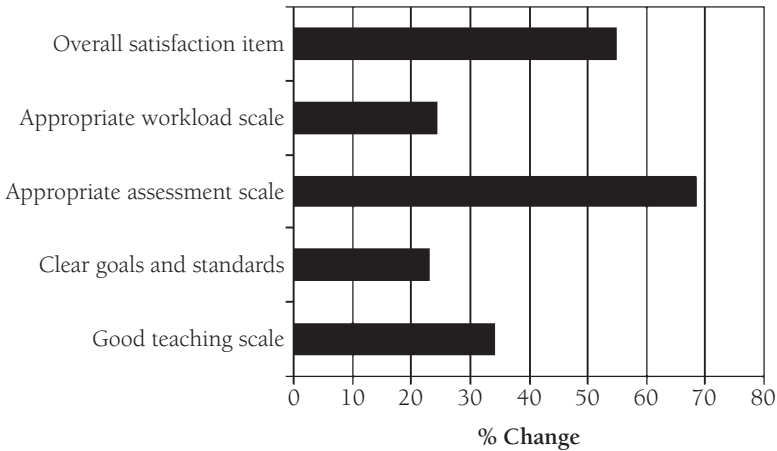
completion. Therefore, CEW is a powerful tool for predicting CEQ out-
comes and the factors that are likely to affect program quality and satis-
faction.

Through promoting reflection by students, teachers, and program man-
agers, CEW has facilitated improvements in the quality of all areas of teach-
ing and learning. For example, since 2000, the School of Physiotherapy has
improved its scores in all fourth-year program-to-date ratings. Figure 8.3
shows the percentage improvements in CEQ-based teaching scales from
2000 to 2002. In 2000, the school experienced lower scores in appropriate
assessment and workload. Based on this early warning, teachers and pro-
gram managers worked on these areas in 2001. Their actions were deemed
successful when subsequent scores improved in these areas and on the over-
all program satisfaction in 2002. When the 2000 graduate CEQ scores
finally became available, there was indeed a drop in scores. Without CEW,
this student dissatisfaction would not have been discovered until well after
student graduation, which would have been too late to improve the program
for those students then enrolled. In addition, CEW makes it possible for
program managers to compare a school's performance with national aver-
ages or with other schools. This benchmarking function is valuable in the
current competitive academic environment.

CEW also provides the School of Physiotherapy with data to measure
against key performance indicators of success from the school, division, or
university and the strategic planning framework in the areas of student sat-
isfaction, improvement in delivery of products and services in teaching and
learning, effective use of resources to achieve outcomes, and identifying
teacher development needs to improve teaching and learning.

Conclusion

Based on a learning-community model, CEW is an effective tool to enhance reflective practice on teaching and learning. It also provides valuable benefits for continuous monitoring of teaching and learning in individual courses, across streams within programs, across whole programs, and between schools. Because CEW actively addresses student satisfaction and concerns, students commit to providing feedback within the learning community. Furthermore, the system is a mechanism to enhance program management, to improve student satisfaction, and to provide evidence of a quality-improvement process in educational programs.

Those thinking about educational course or program evaluation should consider an online evaluation tool as a way to solicit high-quality data in a timely manner. The success of such a system depends on the support of academics and the extent to which students participate and feel ownership of the process. Through CEW, the School of Physiotherapy at Curtin University has created a successful learning community committed to faculty-student reflection and educational excellence.

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Higher Education Research & Development

Online student evaluation improves Course Experience Questionnaire results in a physiotherapy program

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Online student evaluation improves Course Experience Questionnaire results in a physiotherapy program

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This paper reports the use of an online student evaluation system, Course Experience on the Web (CEW), in a physiotherapy program to improve their Course Experience Questionnaire (CEQ) results. CEW comprises a course survey instrument modelled on the CEQ and a tailored unit survey instrument. Closure of the feedback loop is integral in the CEW system. Analysis of the data shows that the students' evaluation in their final year of the program is closely correlated with their CEQ results. Increases in the CEQ scores from 2001–04 included an increase in the Good Teaching Scale (27.5), Generic Skills Scale (10.3) and Overall Satisfaction Index (29.3). By using CEW, academics at the School of Physiotherapy were able to determine students' perceptions during the course, make changes to teaching and learning, where appropriate, in a timely manner and, as a result, the CEQ scores were improved markedly.

Keywords: course evaluation; course experience questionnaire; evaluation methods; student evaluation; student satisfaction

Introduction

Course Experience Questionnaire instrument for course quality assessment

The Course Experience Questionnaire (CEQ) is a national survey used to measure graduates' perceptions and satisfaction with the teaching and learning in their course[1] of tertiary study (Ramsden, 1991). The CEQ is used extensively in Australia and, more recently, in the United Kingdom (UK). It was developed by Ramsden and Entwistle (1981) and is based on university teaching and learning pedagogy and, in particular, on factors related to students using a deep approach to learning. The development and validation of the CEQ has been studied and reported extensively (McInnis et al., 2001). The CEQ was developed to allow for discrimination between institutions and fields of study (Curtis & Keeves, 2000; McKinnon, Walker & Davis, 2000; Ramsden, 1991). The most common potential use of the CEQ results is for inter-institutional benchmarking for best practice within fields of study (Wilson, Lizzio & Ramsden, 1997). Institutions can use the results of the CEQ also to provide information on the benefits and constraints of particular courses (Griffin et al., 2003). In its development, the CEQ was intended for making comparisons within fields of study, over time or across institutions but is not valid for making comparisons between subjects/fields of study (Trembath, 1998). The results can provide information that indicates where improvements in satisfaction of a course experience can be made, particularly as it relates to quality of teaching (Trembath, 1998).

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The CEQ used nationally in Australian universities to compare graduate experiences

Although the CEQ is useful for national benchmarking purposes, it is neither timely nor helpful in terms of the continuous quality improvement needed by individual Academic Heads (i.e. manager of a teaching area). Students are surveyed nationally using the CEQ on behalf of the Graduate Careers Council of Australia (GCCA). The survey, comprising up to 25 items, is conducted in the year following completion of the course of study. Compulsory scales for all universities are the Good Teaching Scale (GTS; six items), Generic Skills Scale (GSS; six items) and Overall Satisfaction Index (OSI; one item). Because of the volume of data collected nationally and the time taken to analyse and provide results, the student opinions expressed are almost eighteen months old before they are available for the purpose of assisting the quality improvement process. Thus, any changes might be implemented over the course of a three- or four-year course could take anything up to five to six years to be reflected in the CEQ results.

Little evidence that national CEQ use has led to improved teaching and learning

However, although the CEQ has had a significant impact on institutional culture since its introduction, there is little published evidence to show how it links to improvements in the quality of teaching (Patrick, 2003) or that student evaluation surveys of teaching and learning influence teaching practice, student learning or their educational experience. One Australian university (RMIT University) reports that, although the CEQ had been used since 1994 and teachers had been encouraged to gain an educational qualification, the Good Teaching Scale had improved only marginally at university level over a five-year period (Patrick, 2003).

Evaluation may need to be at a more detailed unit level

Evaluation at a course level may not be sufficiently targeted to enable improvements. Although the CEQ was never intended to provide feedback with regard to individual subjects or teachers, a number of Australian universities have adopted the CEQ questions for student evaluation of teaching at a unit[2] level (Anderson, 2005; Dixon & Scott, 2003). The University of Sydney has adopted the CEQ to survey coursework students annually in 1999. The results of this annual survey are analysed and reports produced to various stakeholders at the University (Symons, 2004). To date, there are no publications identifying improvements in teaching and learning outcomes using the CEQ items for the evaluation of units or courses. The relationship between student evaluations of single units of study and students' perceptions of a course, either during the learning period or as a graduate, is unclear. Recent research has also shown that the CEQ results are highly dependent on the graduating students' employment status (Scott, 2005).

Evaluation has been targeted to individual academics

MacLeod (2000) argues that an evaluation system needs to be targeted toward teacher development and there are many instruments currently being used to collect individual teacher feedback (e.g. Student Opinion Questionnaire (SOQ), Student Appraisal of Teaching (SAT) and Student Evaluation of Educational Quality (SEEQ) (Marsh, 1982, 1987; Marsh & Hocevar, 1991)). These instruments have been useful to individual academics in understanding student reaction to their teaching styles and individual unit content, as well

as provision of evidence for the purposes of promotion; however, often, the information is collected in isolation without regard for the context of the student's course. In addition, it is confidential to the academic collecting it and, therefore, cannot contribute to any major continuous quality enhancement strategies that might be initiated by an Academic Head responsible for a course of study. A survey of academics conducted in pharmacy courses throughout the United States of America indicated that, although they used student evaluation of teaching instruments, they preferred not to commit themselves with respect to its value or influence on their teaching program (Barnett & Matthews, 1997). Such lack of commitment to the process is of concern but not necessarily surprising given the range of approaches to the collection of evaluation feedback and controversy surrounding their use (Kulik, 2001).

Lack of feedback to students may limit impact of evaluation

One problem of particular significance to students is that current methods employed in collecting student evaluation of teaching do not provide a mechanism for closing the feedback loop (Watson, 2003). That is, feedback provided by students is analysed, acted upon by academics and results and actions are communicated back to students. As students have often completed the unit of study at the time of providing the feedback, they have no mechanism for determining the degree to which the information they have provided has influenced change for themselves or the next cohort of students. The lack of closure of the feedback loop creates a climate in which students do not take the existing feedback mechanisms seriously but, rather, may use the opportunity to express their frustration, in general, rather than providing constructive feedback.

Onerous workloads on academics and students may limit quality of evaluation

Dissatisfaction among academics and students with the process of student evaluation of teaching may also relate to the difficulty in utilising feedback when it is collected and used in isolation. In addition, with every faculty member seeking feedback, students are often overwhelmed with repeated requests that almost always coincide with the end of semester and concomitant examination period. Therefore, the quality of student responses may be affected by survey fatigue.

New system developed to improve impact of evaluation

In 1998, the School of Physiotherapy at Curtin University of Technology benchmarked their CEQ performance against other similar programs across Australia and found that their results were lower than desired. At this time, Curtin did not have a university-wide system to achieve systematic evaluation of teaching and learning. The SEEQ was available for teachers at Curtin but its use was voluntary and results were reported only to the participating teacher. In an effort to address some of the dissatisfaction among academics and students, as well as a poor CEQ performance, the School of Physiotherapy investigated a systematic online approach to student evaluation of teaching and learning. The system included two questionnaires: one that is based on the CEQ with additional items and another designed for specific units of study. A feedback loop was embedded into the system. A learning community model that was responsive to student needs was adopted and had the following three objectives:

- To promote student reflection on learning through regular self-review of their own attitudes and commitment to learning, and through engagement in the academic development of their course.
- To maximise academic reflection on teaching through provision of student feedback combined with peer support to improve teaching.
- To establish course manager reflection on teaching and learning through regular documentation of student expectations and the responses of academics to these expectations. A course manager is an academic responsible for the coordination and academic management of a student year group, a collection of units that have a common theme (stream) or an entire course of study.

This paper reports the implementation of an online student evaluation system and subsequent changes in nationally derived CEQ scores (Good Teaching, Generic Skills and Overall Satisfaction) for the Bachelor of Science (Physiotherapy) during 2001–04 at Curtin University of Technology.

Method

Sample

The sample included all undergraduate students ($n = 1447$ enrolments) enrolled in the four-year Bachelor of Science (Physiotherapy) program at Curtin University of Technology during 2001–04.

Instruments and procedure

An online system called Course Evaluation on the Web (CEW) was developed so that feedback could be collated rapidly and partially analysed for easier use by academic staff. Two questionnaires were developed: a Course to Date Questionnaire and a Unit Questionnaire. The Course to Date Questionnaire comprised the same 25 items as the CEQ, as well as additional items related to the local environment, broader environment and overall satisfaction of each unit of study for a semester. The Unit Questionnaire included items related to the student commitment to learning, peers, learning materials, teaching academics, unit management and overall satisfaction. Academics were able to add unit-specific questions to the Unit Questionnaire to obtain additional information on particular issues. On both questionnaires, students rated their level of agreement with statements on a five-point categorical scale (i.e. from strongly agree to strongly disagree). In addition, students were asked to provide qualitative feedback on the three best and poorest aspects of the unit/course and to provide suggestions for change. Additional space was provided for further comments.

A project team comprising five academics and four student representatives (one from each year of the program) managed the implementation of the system. The project team was advised by a reference group of academics recruited from various other disciplines across the University. Workshops were held with students to assist them to learn how to provide constructive and professional comments and feedback. The workshops also raised student awareness of the need for reflection on their own learning and the contribution this could make toward ensuring the success of their personal endeavours.

Each teaching semester, all students completed a Course to Date Questionnaire and a number of Unit Questionnaires. To avoid student fatigue, Unit Questionnaires were allocated to a representative number (i.e. one-third) of the student cohort; that is, a minimum

of 25 students. This meant that each student was asked to complete a maximum of only three to four Unit Questionnaires. Academics found the comments provided by one-third of the students to be sufficiently detailed, but when sample sizes dropped below 25 the representativeness of comments was compromised. Students wanting to provide specific feedback on a unit they were not allocated could provide an overall satisfaction rating and qualitative comments within the Course to Date Questionnaire. To further minimise student workload, when student satisfaction for a unit was high over subsequent semesters and when there were no anticipated changes to the learning experiences, assessments or teaching staff, the project team and unit coordinator could elect not to have the unit evaluated for that semester. The Course to Date Questionnaire provided the mechanism for students to rate their satisfaction with this unit and the qualitative section for providing feedback. In this way, course managers and the unit coordinator could continue to monitor student satisfaction with the unit over time. Data were collected during weeks 14–18 of each semester (biannually).

Student feedback was accessible immediately to academics at the end of the data collection period. For each questionnaire, a frequency analysis on quantitative items, including graphical representation of the distribution, was provided. For the Course to Date Questionnaire, all scales used in the CEQ were also calculated. Students' comments were automatically sorted, using key words, into appropriate categories to aid interpretation. Workshops were held for academics to help them learn how to evaluate the student comments and put them within a context of other course demands; for example, professional demands for content.

Following peer discussion and reflection, academics created a Summary Report that identified key themes in student feedback. To ensure a closure of the feedback loop, staff also created a Response to students outlining any proposed changes that were or were not planned for the following year based on student feedback and the reasons for these. Full details of the CEW process are provided in Tucker et al. (2003b).

The student responses, and academic Summary Report and Response were publicly accessible to all students and academics in the School of Physiotherapy via a password-protected Intranet site. Data were available for all data collection periods; from the inception of CEW in 1998 to the present time, providing trend data and a record of changes that have occurred to units and the course. In continuing classes, student representatives and academics presented an overview of feedback, teaching academics' responses and changes made as a direct result of student feedback in the subsequent semester. Students were able to see that their feedback had been heard, valued and contributed to course improvements. Academics openly discussed issues related to their teaching and the students' learning with both their students and their peers. Examples of best practice were shared at teaching and learning sessions.

Course managers also provided Summary Reports and Responses to the Intranet site and provided verbal feedback to entire student groups. Benchmarking of the Course to Date Questionnaire was performed annually to monitor and compare course performance with similar programs in Australia. The benchmarking data and trend data on the scales of the Course to Date Questionnaire and Unit Questionnaire satisfaction scores were presented to all academics on an annual basis.

Data analysis

The CEQ data for the 2001–04 graduate cohorts were obtained from the GCCA. This included the Good Teaching Scale, Generic Skills Scale and Overall Satisfaction Index for

the Curtin Course and 12 other Australian physiotherapy courses. The national average for each scale was also obtained and averages for the bottom three and top three courses were calculated.

Evaluation data from the quantitative items of the CEW Course to Date Questionnaire and Unit Questionnaire were processed. The comparable items for Good Teaching Scale, Generic Skills Scale and Overall Satisfaction Index were calculated from the Course to Date Questionnaire and presented graphically to show trend data for 2001–04. The individual items for each scale were also calculated and represented graphically to show trends for 2001–04. The satisfaction item for each unit from the Course to Date Questionnaire for each unit was calculated and trend data plotted over time for 2001–05. The CEW and CEQ scores were compared (for the same student cohort) and plotted over time to compare instrument scores and determine the ability for CEW to predict the CEQ.

Satisfaction with process

Students' and academics' (including managers') satisfaction with CEW was evaluated through a formal evaluation survey (Academic Climate Survey and an anonymous survey administered to student year groups in class) and focus groups, conducted by an external consultant in 2000, 2001 and 2002 (Tucker et al., 2003b).

Results

Eight Course to Date Questionnaires were collected each year across the program (one each semester for each of the four years of the course) and 64 Units Questionnaires were evaluated each year across the program. Very high response rates (> 95%) were achieved for student feedback. The multiple iterations of four years' experience and engagement of CEW involved 55 academics and 10 course managers over 2001–04.

Curtin CEQ scores

An increase in the CEQ scores (Good Teaching Scale, Generic Skills Scale and Overall Satisfaction Index) was achieved between 2001 and 2004 (see Table 1). For each scale, Curtin improved such that scores in 2004 were much better than the national average. Figure 1 shows Curtin scores benchmarked against the national average and the average of the bottom and top three Bachelor of Science (Physiotherapy) programs in Australia.

Curtin CEW scores

Trend data for the CEW scales obtained from the Course to Date Questionnaire varied for each semester of the course. Scores from some semesters of the program were higher than

Table 1.   Improvement in Course Experience Questionnaire (CEQ) scale scores, 2001–04.

Scale	2001 CEQ score	2004 CEQ score	Change in CEQ score
GTS	8.1	35.6	27.5
GSS	41.5	51.8	10.3
OSI	28.0	57.3	29.3

Note: CEQ scale is −100 to 100.
GTS, Good Teaching Scale; GSS, Generic Skills Scale; OSI, Overall Satisfaction Index.
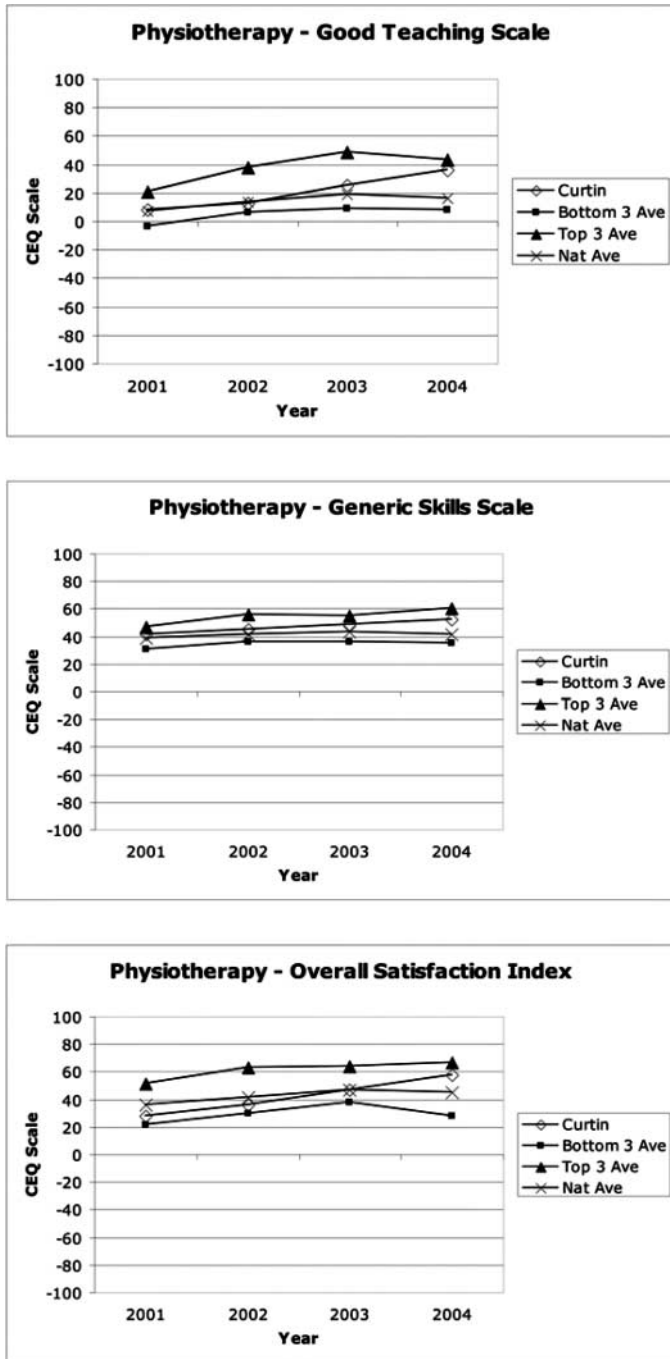
Figure 1. Graduate Course Experience Questionnaire (CEQ) results for Bachelor of Science (Physiotherapy) 2001–04 benchmarked against national data.
Note: CEQ Scale is −100 to 100.
Curtin scores are benchmarked against the national average (Nat Ave) and the average of the bottom (Bottom 3 Ave) and top three (Top 3 Ave) Bachelor of Science (Physiotherapy) courses in Australia.

others, in particular the first two and final four semesters of the course. The greatest improvements in all CEW scores (i.e. the Good Teaching Scale, Generic Skills Scale and Overall Satisfaction Index) were achieved in the third and fourth year of the course. Figure 2 shows an example of the Overall Satisfaction Index taken from semester 2 of each year of the Course to Date Questionnaires, when the greatest improvement occurred in the third year of the course. By graphing each of the Scales, changes in student perceptions while studying in the Physiotherapy course were monitored.

Further analysis of each of the items within the scales was also conducted. This analysis showed that the items for which academics were rated highly in all semesters across the course were their ability to motivate, explain and make their teaching interesting. The item that needed the most improvement in the Good Teaching Scale was related to giving students feedback: 'Staff here put a lot of time into commenting on my work'. Figure 3 shows trend data for the CEW Good Teaching Scale items for one semester (from Year 4 of the program) for 2001–04. Improvements were evident in all items; however, this graph also demonstrates that the item 'Staff here put a lot of time into commenting on my work' is rated lowest in this semester.

For the Generic Skills Scale, students rated the course very highly for the development of their ability to work as a team, their problem-solving skills, analytical skills and ability to plan their work. Students rated the course less highly for the ability to improve written communication skills and confidence in tackling unfamiliar problems in the first and second years of the course but these items were rated much higher by the final (fourth) year.

Improvements in student satisfaction were demonstrated at unit level. This was monitored by trends from the satisfaction item in the Course to Date Questionnaire and Unit Questionnaire. Student satisfaction with units varied across years. As Unit Questionnaires were not administered each calendar year, trend data from the Course to Date Questionnaire
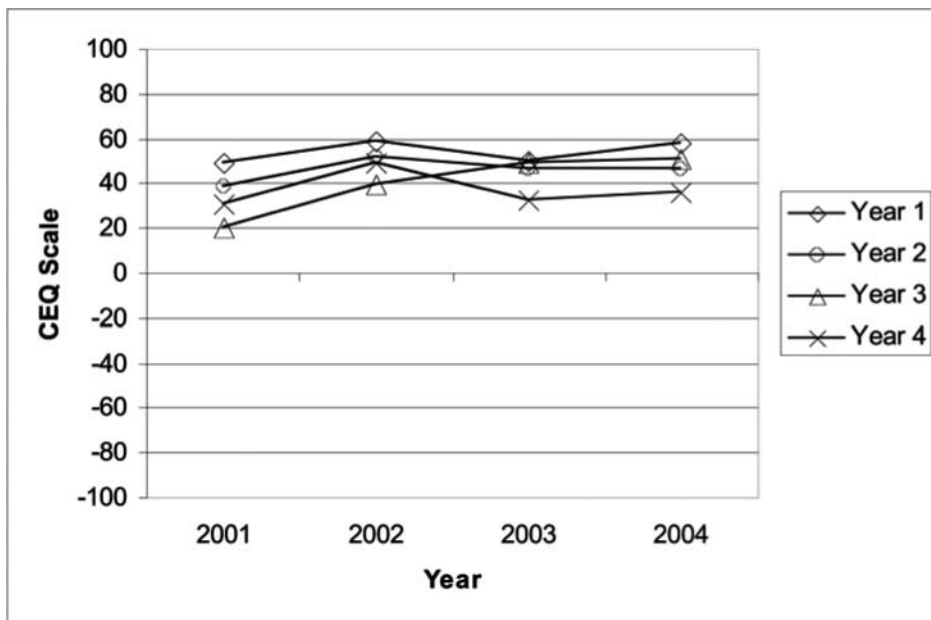
Figure 2.   Overall Satisfaction Index taken from semester 2 of each year of the Course Experience on the Web (CEW) Course to Date Questionnaires, 2001–04.
Note: Course Experience Questionnaire (CEQ) Scale is −100 to 100.
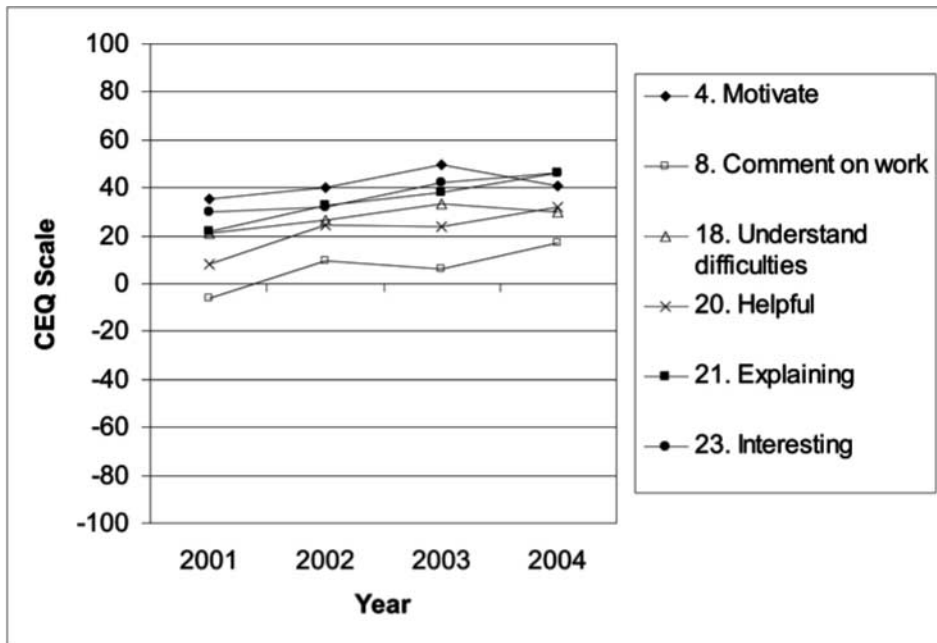
Figure 3.   Course Experience on the Web Good Teaching Scale items for one semester 2001–04 taken from Year 4 of the program.
Note: Course Experience Questionnaire (CEQ) Scale is −100 to 100.

were more useful. Improvements in student satisfaction with units were most evident when trends were analysed over a five-year period (i.e. 2001–05). Figure 4 shows the satisfaction scores taken from the Course to Date Questionnaire of two individual units (2001–05).

Trends in CEQ scores track earlier CEW score trends

Previous research showed that CEW data, taken from final year students' feedback, predicted trends in their CEQ responses (Tucker, Jones & Straker, 2003a). For the same student cohort, we found that the scales calculated from the final year students' feedback continued to predict trends in the CEQ responses. Table 2 shows the CEW Course to Date scores for Good Teaching, Generic Skills and Overall Satisfaction taken from the final (i.e. fourth year) student evaluations in their first and second semester. The CEQ scores for the same student cohort (i.e. one year later) are also shown. For example, CEW data taken from 2004 predicted the 2005 CEQ data.

Learning community satisfaction with CEW Process

Staff had a high degree of satisfaction with the range of questions included in the Unit and Course to Date Questionnaires, and felt the mechanism was very useful for obtaining timely and useful feedback. The Academic Climate Survey (2002) showed a 23% increase in academic perception of support for reflective practice and a 20% decrease in academic cynicism toward change since 2000. Results from student focus groups, comprising five to ten students in each year of the course, confirmed that 82% of students believed that CEW was
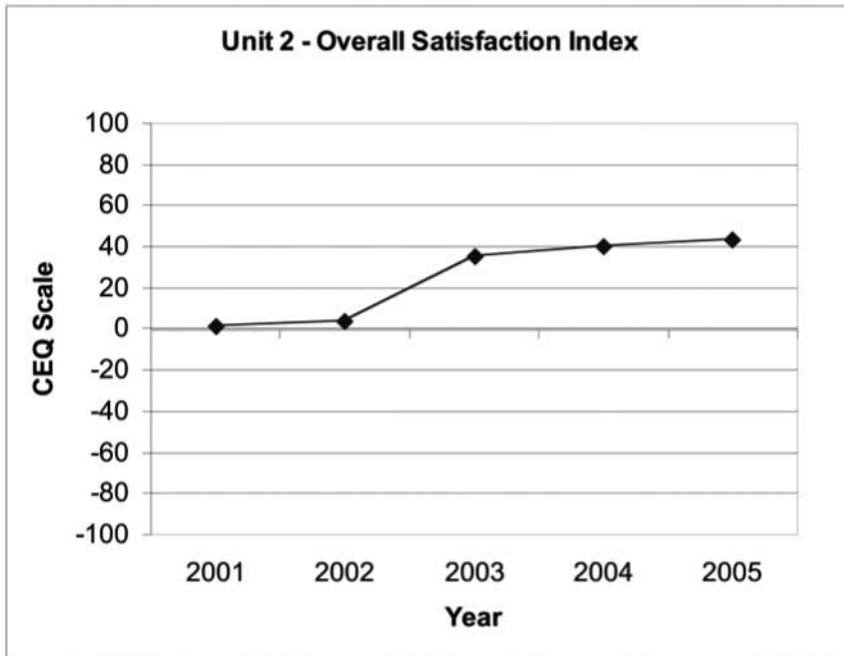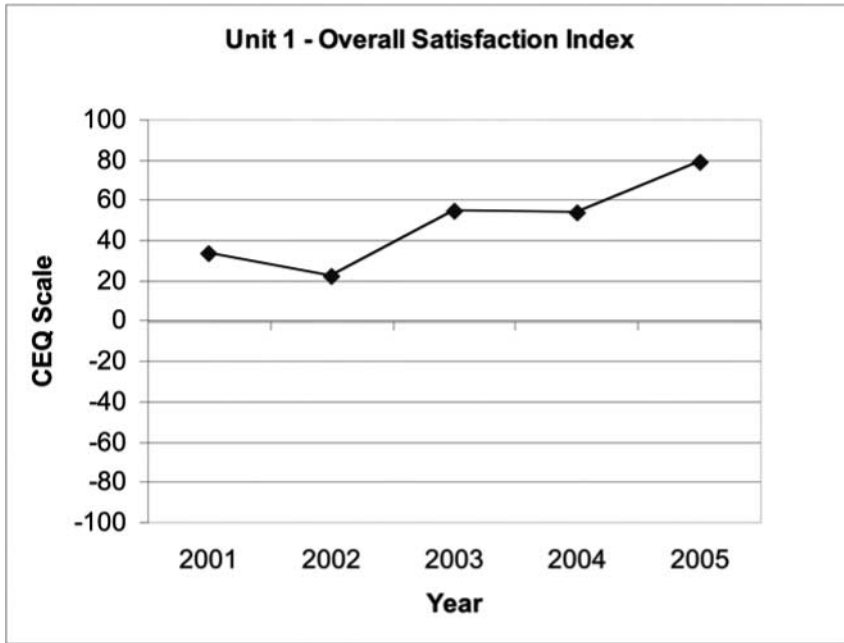
Figure 4. Trend data on satisfaction scores from two units taken from the Course to Date Questionnaire, 2001–05.
Note: Course Experience Questionnaire (CEQ) Scale is −100 to 100.

Table 2. Comparison of final-year CEW Course to Date scores and CEQ scores for the same student cohort for Good Teaching Scale, Generic Skills Scale and Overall Satisfaction Index.

Year	CEW scores (*n*)		CEQ score for same student cohort (*n*)
Good Teaching Scale			
	Semester 1	Semester 2	
2001	21.0 (60)	18.5 (78)	12.6 (45)
2002	30.7 (80)	27.6 (79)	25.1 (53)
2003	36.7 (63)	32.6 (75)	35.6 (33)
2004	39.5 (55)	35.8 (77)	32.4 (44)
Generic Skills Scale			
	Semester 1	Semester 2	
2001	53.2 (60)	55.5 (78)	44.7 (45)
2002	55.0 (80)	55.2 (79)	49.0 (53)
2003	58.4 (63)	55.9 (75)	51.8 (33)
2004	58.2 (55)	55.9 (77)	46.2 (44)
Overall Satisfaction Index			
	Semester 1	Semester 2	
2001	33.1 (60)	30.5 (78)	36.2 (45)
2002	44.9 (80)	49.4 (79)	46.4 (53)
2003	47.6 (63)	54.7 (75)	57.3 (33)
2004	55.8 (55)	53.3 (77)	48.9 (44)

Note: Course Experience Questionnaire (CEQ) Scale: –100 to 100.
The CEQ score in this table is published one year later.
CEW, Course Experience on the Web.

beneficial, 87% found CEW easy to use, 82% indicated that they were able to express their opinions adequately and 63% believed CEW encouraged them to reflect more on their learning experience. Qualitative comments from staff also indicated a positive attitude towards CEW; for example:

CEW is a great idea and a good thing for lifelong learning for everyone.

Staff can see how student perceptions change over the duration of the course and, thus, allows for a more integrated approach to improving teaching and learning within the School.

CEW has stimulated a great deal of reflective practice during the summary and review stages of the process.

Reflection on teaching and the sharing of experience and ideas with each other appears to have become ingrained into the usual day-to-day action of the teaching staff.

Discussion

Very high student response rates were achieved using CEW evaluations for a number of reasons. Student representatives were always part of the development and promotion of

CEW to the student body. The student body agreed to participate in CEW as a quality improvement process and believed that CEW feedback should be mandatory. Every possible mechanism was made to promote CEW, including a written prompt in unit outlines, oral promotions at lectures by student representatives and academics, personal email reminders and messages on bulletin boards (paper and online).

Reasons why CEW was successful

Feedback to students

Although universities in Australia employ evaluation systems, many do so without providing mechanisms for engaging staff in reflective practice or mechanisms for developing teachers. The quality enhancement cycle within the School of Physiotherapy required staff to reflect on the feedback, identify strengths and areas for improvement and, where possible, implement the changes in the next teaching cycle. The results of the student feedback were public to all students and academics at the School of Physiotherapy. Student feedback was discussed openly and academics were encouraged to seek peer mentoring and discuss their teaching and learning strategies. Accountability to students, as well as closure of the feedback loop, was achieved through dialogue with subsequent student groups about the changes to be made as a result of their feedback. In this way, students felt their contributions were valued; they were part of the quality enhancement cycle and contributed to the improvement of their learning experiences. The degree to which students saw CEW as beneficial is likely to be directly related to their belief that their feedback will be used to improve the course.

Staff accountability and support

Many evaluation systems, such as SEEQ, that are used for academic reflection and development often treat student feedback as confidential, being made available only to the academic involved (MacLeod, 2000). However, a private system prevents academics from comparing their feedback against appropriate norms, and limits the degree to which student feedback can be used meaningfully for institutional purposes (MacLeod, 2000). The success of CEW is largely attributed to the public sharing of information between academics and students via the feedback loop and the open and transparent culture this has created. The dialogue between teachers and students about teaching and learning is critical to the enhancement of students' perceptions about their experience.

Academics as teachers

Academics teaching in Physiotherapy are primarily discipline experts who enter into university primarily because of their clinical or research expertise. Of the 65 academics involved in teaching at the School of Physiotherapy at Curtin, only four have a formal teaching qualification.

Although teacher development programs are also successful in achieving improved teaching and learning practices (Coffey & Gibbs, 2000; Gibbs & Coffey, 2004) this was not implemented in the School during this study period. Rather, CEW used peer mentoring by experienced academics with high rating scores. Academics participated in healthy rivalry and continuously strived to improve the performance of each of their units by benchmarking their results against other staff, and discussing and implementing better ways of teaching and facilitating student learning. CEW feedback provided rich data for academics to

determine the strengths/weaknesses of units and the course and provided a stimulus for improvement. The following comment, taken from a unit coordinator Report, provides an example of teacher reflection and development resulting from student feedback:

> Student feedback was mainly related to the learning material (the guide was not well organised and was incomplete).

> Overall, I got the impression that students want very clear guidelines as to what they have to learn, what the objectives and goals are for each week, what is essential to read and so on. This has never been as clear to me as it is now and I feel I have a better idea how the guide has to be structured.

> Actions: For next semester, a more detailed and better organised Guide will be produced. The number of essential readings will be reduced and those that are for further reading will be clearly stated.

The benefit of additional professional development for the academics at the School of Physiotherapy has not been studied and is an area for future research.

Community engagement

There is little evidence that evaluation systems result in an improvement in teaching quality unless there are policies and procedures that facilitate change (Black, Cannon & Hicks, 2001; Kember, Leung & Kwan, 2002) or there is staff commitment to improve. CEW is the first reported evaluation system that has demonstrated significant improvements in teaching and learning ratings and program quality and satisfaction. Although no formal policies were developed, CEW became part of the School's recommended quality enhancement process. Academics and students demonstrated their commitment to improving the student's learning experience by continuing to engage in CEW.

Culture of improvement

Improvement in the CEQ scores requires a significant cultural change (Patrick, 2003). For improvements to occur (i.e. improvements in teaching and learning and an understanding of student situations), a radical re-examination of curricula is required (Patrick, 2003). CEW is ongoing at the School of Physiotherapy at Curtin and provides a rich source of information as it currently undertakes curricula review.

Strategies for improving teaching and learning

Student feedback was used by course managers and unit coordinators to improve teaching and learning in the School of Physiotherapy on a number of levels: the course experience as a whole, the year level, stream level (units comprising themes such as professional practice stream, research stream) and unit level. Teaching staff involved with teaching at each of these levels decided collectively on strategies for improving the students' experiences. Examples of best practice were shared and debated and embedded in the program. We now discuss examples of strategies that were implemented across the course.

One strategy implemented to improve students' perceptions of Good Teaching ('Staff here put a lot of time into commenting on my work') was to provide dedicated, timetabled

time for face-to-face feedback with students. All marked student assessments (practical and written) were made available to students at the next appropriate contact time so that students could view their feedback and discuss this with their peers and teachers. For end-of-semester written and practical examinations, the first contact week of the next period of study was designated for feedback from these examinations. Previous to this time, the provision of feedback on students' work was patchy, particularly for end-of-semester examinations. The implementation of dedicated timetabled time for this activity for all units is now embedded in the course.

Peer assessments with clear performance criteria were introduced, where appropriate, to provide students with more opportunities to receive and provide feedback on their learning. Staff feedback on these assessments was also provided to the entire class to highlight areas of deficiency and clarify misconceptions.

Master classes were introduced within all streams in the course to develop the students' clinical reasoning skills. For example, the full assessment and treatment of a client was performed live before the entire student cohort and the clinical reasoning process verbalised by the experienced teacher. Students were given the opportunity to be a part of the problem-solving process of diagnosis and management of the client. These master classes provided students with greater confidence and preparation for progression to their clinical learning experiences. Following the master class, teachers stimulated class discussion on the case and provided the opportunity for questions and answers.

Best practice examples of learning materials were shared and a template learning guide was developed for all units. This guide provided students with detailed learning objectives for each weekly topic, essential readings, and learning activities for each class and for independent study. Learning materials were developed on the School Intranet site and included discussion boards, quizzes and lecture notes. These resources and materials were linked with each topic and teaching session by teachers and provided students with clear guidelines in their learning.

Study limitations

The survey instruments used in CEW were developed without undertaking robust analysis of the validity of the additional items used in the Course to Date Questionnaire or with any of the items in the Unit Questionnaire. This is an important limitation. It was useful to be able to compare the same items in the CEW Course to Date instrument and benchmark them against the CEQ results. It should be noted, however, that in Australia there is currently debate about the limitations of the CEQ as it focuses on teaching, particularly in traditional instructional settings, as opposed to student learning and engagement (Coates, 2005). Irrespective of validity issues surrounding the survey instrument used to collect student feedback, of major importance is the process of involving students in improving teaching and learning, and the open and transparent culture created by a process such as CEW. Student feedback is used to challenge academics to consider different ways of teaching and learning and provides a conversational dialogue with peers. Successes in CEW are attributed to the culture in which teaching and learning is discussed openly and valued by both students and teachers.

Conclusion

The School of Physiotherapy at Curtin University of Technology developed and used an online student evaluation system, Course Experience on the Web (CEW), to improve

subsequent Course Experience Questionnaire (CEQ) results. The early identification of student views provided an impetus for dialogue about teaching and learning between teachers and students. Student feedback was used by staff and managers to identify teaching and learning issues in the program and make changes in a timely manner so that the CEQ scores were improved. Evaluation systems in which students feel they have a voice and in which their views are respected can make a difference to their learning experiences. The challenge for higher education is that universities achieve a culture of transparency in which academics feel comfortable sharing their teaching and learning practices and experiences, and in which peer support and student feedback is welcomed. A formal process for closing the feedback loop to students optimises the opportunity for students to feel that their views are heard and acted upon.

Acknowledgements

Notes

1. A 'course' refers to a program of study leading to an award.
2. A 'unit' refers to a discrete entity of study within a subject area that is a component of a course.

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Student evaluation to improve the student learning experience: an Australian university case study

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PLEASE SCROLL DOWN FOR ARTICLE

Student evaluation to improve the student learning experience: an Australian university case study

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Universities have been collecting student feedback on their experiences in teaching and learning for decades. Their voice is usually captured in surveys, and quantitative and qualitative data are used for quality improvement. Quantitative data are often used to monitor the student experience and used as a key performance measure in universities. This paper describes key drivers influencing the implementation of student evaluation systems in Australia. The case of one university's approach is used to describe how the student voice, in addition to those of other key stakeholders, is used to analyse and improve the student experience in teaching and learning.

Keywords: teaching and unit evaluations; student evaluation of teaching; quality improvement; student perceptions; quality assurance

Introduction

Student feedback has been collected using student surveys worldwide since the 1950s to evaluate teaching and learning in higher education with the aim of monitoring student perceptions and quality improvement (Marsh & Roche, 1992; Sorensen & Reiner, 2003). Much of the research on student evaluations has focused on student evaluations of teaching effectiveness, dimensions of teaching effectiveness, issues of reliability, validity, student and teacher bias, and usefulness of feedback instruments. The following recent reviews provide a critical review of the literature (Alderman, Towers, & Bannah, 2012; Benton & Cashin, 2012; Hirschberg, Lye, Davies, & Johnston, 2011; Perry & Smart, 2007; Richardson, 2005; Spooren, 2012). However, there is a lack of research worldwide on the impact of student evaluations on quality in teaching and learning and on systems that improve the student learning experience.

There is considerable debate within the higher education sector, particularly in Australia, on fitness for purpose in the use of student evaluation surveys particularly where the results of these evaluations are used to monitor and report on teaching and learning quality for the purpose of quality assurance and for the purpose of quality enhancement (Davies, Hirschberg, Lye, & Johnston, 2010). The overarching aim of this paper is to share the practice of an Australian university in using student evaluations for improving the student learning experience: work that has been recognised by the Australian Universities Quality Audit (Australian University Quality Agency: Good Practice Database, 2009) and an Australian Award for University Teaching (Australian Government, Office

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for Learning and Teaching, 2007). The drivers impacting on the development of evaluation systems in Australia are described. Key features of this Australian university student evaluation system are provided focusing on its use in improving the student experience (quality improvement) whilst fulfilling institutional and national obligations (quality assurance).

The Australian context

Over the last 2 decades, Australian governments have undertaken an active role in promoting quality assurance in higher education resulting in the establishment of national student and graduate surveys with a renewed focus on internal quality systems and indicators of learning and teaching (Chalmers, 2007). A series of seminal events have shaped the development and use of student evaluations in Australia. In 2003, the Australian government introduced performance-based funding with the introduction of the Learning and Teaching Performance Fund (LTPF) using graduate feedback on teaching and learning, graduate outcomes (employment and further studies), student progress, and retention rates (Department of Education Science and Training, 2004). Eligibility for the LTPF was that universities were required to have a systematic student evaluation system, reporting student feedback to the general public. In 2008, a review of Australian higher education (known as the Bradley Review) highlighted the need to have a "comprehensive approach to measuring and monitoring the level of student engagement and the total student experience"; aligning the student experience with the achievement of learning outcomes (Bradley, Noonan, Nugent, & Scales, 2008, p. 78). Subsequently, the Australian Government accepted the majority of the Bradley Reviews' recommendations and formed the Tertiary Education Quality and Standards Agency (TEQSA) in 2012. This Agency is a single regulator for the sector with a suite of new performance measures of the student experience, many of which will be made publicly available on the "MyUniversity" website (Department of Industry Innovation Science Research and Tertiary Education, 2012).

Since 2002, Australian universities have been required to collect graduate feedback (called the Graduate Destination Survey using the Australian Graduate Survey (AGS)), which includes three scales on Good Teaching, Generic Skills, and an item on Overall Satisfaction, within the Course Experience Questionnaire (CEQ). The CEQ was originally developed as a teaching performance indicator focusing on the link between the classroom teaching environment, student approaches to learning, and higher quality learning (Brennan et al., 2002; Ramsden 1991; Wilson & Lizzio 1997). As originally intended, universities used the data to benchmark teaching quality and perceived graduate skills at the degree level, tracking performance over time and benchmarking "like" degree programs between different institutions (Barrie, Ginns, & Symons 2008). With the development of the LTPF, the AGS and CEQ were used for performance-based funding (Barrie et al., 2008), and the results of the Graduate Destination Survey and CEQ are currently publically available on the "MyUniversity" website (Department of Industry Innovation Science Research and Tertiary Education, 2012).

Student surveys such as the Australasian Survey of Student Engagement (AUSSE) (Coates, 2006), the First Year Experience Questionnaire (Krause, Hartley, James, & McInnis, 2005), and most recently, the University Experience Survey (Radloff, Coates, James, & Krause, 2011) are employed in the sector to evaluate the student experience at whole of degree or university level. In addition, universities often employ internal instruments to monitor aspects of the student experience related to the facilities and services available to the student. Student feedback collected from these surveys also provides

useful information about the student university experience. The results of these national surveys are useful for monitoring the student experience and national benchmarking.

Alongside regulatory changes in the Australian sector, many universities have been reviewing their internal student evaluation systems and their purpose (Barrie et al., 2008) with the aim of improving teaching and learning quality. Surveys developed for the purpose of monitoring student perceptions of teaching and unit (a discrete subject studied as part of a course or program) quality are increasingly being used for multiple purposes including: quality improvement, academic performance management, informing professional development, rewarding academic performance, informing promotion processes, and as key performance measures for university executives and those discharged with leadership in teaching and for learning outcomes (Barrie et al., 2008; Shah & Nair, 2012). A review of student surveys on teaching and learning in Australia highlights the considerable variation of both instruments and processes utilised for reporting student evaluation data in universities (Barrie et al., 2008). A few institutions adopted the CEQ items to monitor student teaching and unit quality (Barrie et al., 2008; Shah & Nair, 2012) presumably for improving graduate satisfaction and Graduate Destination Survey performance. Such variability hampers the capacity for using student evaluation data for cross-institutional research and benchmarking. Understanding the student's experience of their units and teachers will provide universities with a better understanding of the connection between their experience and student outcomes as measured by indicators such as grades and student progression (Arthur, Tubré, Paul, & Edens, 2003; Davidovitch & Soen, 2009; Duque & Weeks, 2010; Mustafa & Chiang 2006; Spooren & Mortelmans, 2006; Stark-Wroblewski, Ahlering, & Brill, 2007; Tucker, Pegden, & Yorke, 2012).

Case of an Australian university

The University is Western Australia's largest and most multi-cultural university with over 47,000 students, and with Australia's third largest international student population. The University operates out of 16 locations, including Sydney, Malaysia, and Singapore, and is a shareholder provider for Open Universities Australia (these units and courses are fully online). All students use the University's online student management system for administrative and communication purposes and many online learning environments are employed for teaching and learning, either partially or in fully online mode. This paper describes the online student evaluation system (called eVALUate) which was developed at the University, outlining its features and use in improving the student experience. The approaches for encouraging student participation and the way students give feedback are described. The use of the system including the reports generated, mechanism for closing the feedback loop, analysis of qualitative and quantitative data, and role of reports for course and school reviews is explained. Evidence of improvement in student feedback is provided, using as an example the case of one school and showing university-wide trends as a measure of improved university performance. Key issues and challenges are highlighted and, where applicable, solutions are proposed.

The LTPF provided the impetus for the University to develop valid and reliable student evaluation instruments with the focus on learning as well as teaching. Prior to eVALUate, the university used a number of different instruments, most notably the Student Evaluation of Educational Quality (SEEQ), a paper-based survey employed by staff on a voluntary basis (Oliver, Tucker, Gupta, & Yeo, 2008). In 2004, the University developed the eVALUate system, a suite of surveys aligned with their learning outcomes philosophy: *Excellence in teaching and learning at Curtin* (Curtin University, 2003). The tenets within this

philosophy articulate the University's commitment to student learning through an outcomes-focused approach whereby learning experiences are designed to help students achieve the unit learning outcomes. The aim for the University was to have an evaluation system that (a) prompts students and teachers to reflect on the outcomes of learning; (b) allows accessibility for all students; (c) allows transparency and levels of reporting to all stakeholders (that is, students, teachers, those in leadership roles, senior executives, and the wider community); (d) allows for feedback to be translated into communicated strategies for improvement; and (e) informs students of those outcomes and changes made as a result of their feedback ("closing the feedback loop"). The system was developed to meeting the needs of the University with its diverse teaching and learning environments both on and offshore.

Student feedback on units and teachers

Students can give feedback about their unit and their teacher(s) using two separate surveys: the eVALUate unit survey and the eVALUate teaching survey. The development and validation of each survey, including pedagogical underpinnings, have been published elsewhere (Oliver et al., 2008; Tucker, Oliver, & Gupta, 2012). The unit survey is unique as its quantitative items report students' perceptions of what helps their achievement of learning outcomes (Items 1 to 7), students' level of motivation and engagement (Items 8 to 10), and their overall satisfaction with the unit (Item 11). Two qualitative items ask about the most helpful aspects of this unit and how the unit might be improved. The teaching survey comprising seven quantitative items reports students' agreement with items related to teacher characteristics. Two qualitative items ask students to comment on [the teacher's name is inserted here in the survey] strengths and how they think [the teacher's name is inserted here in the survey] might improve the teaching and learning in the unit. For both surveys, students may indicate *Strongly Agree*, *Agree*, *Disagree*, *Strongly Disagree*, or *Unable to Judge* for each item.

How the system works

The eVALUate unit survey is automatically available online for all undergraduate and postgraduate coursework units at all the University's Australian campuses and all major offshore campuses. Students enrolled on a full-time basis normally enrol in four units each teaching period. Each year, there are six main eVALUate events with additional events created to cover almost every other teaching study period. All units are evaluated each time they are available in any study period. The eVALUate surveys are administered online through OASIS (Online Access to Student Information Services), the student web portal. Students are notified by an Official Communications Channel message, and each week of the evaluation event non-responders are sent additional messages to their email accounts encouraging them to provide feedback. For the main semester events, students are also prompted to evaluate their units using website logos and posters distributed on selected campuses. In all communications, students are encouraged to reflect on their teaching and learning experiences including reflecting on their contribution to learning.

The teaching survey is only available for student feedback when requested online by the teacher seeking feedback. For any unit, there may be one or more teachers, and students can give feedback for as many of their teachers as they choose within the one unit. Within the online system, students can only give feedback on their teachers using the teaching survey once they have submitted the unit survey: This is a major factor for driving university

response rates, a key performance measure for many institutions (Tucker et al., 2012). A unique feature of the system is that staff can access and track unit and teaching survey response rates online during an event and subsequently encourage student participation.

Over 45,000 unit surveys are submitted in a usual semester event, and the number of teaching evaluations requested by staff is increasing annually (about 2000 teaching survey requests each semester).

Online reports and closing the feedback loop

One of the key features for eVALUate is the transparency of student feedback because eVALUate results are available at various levels of detail to key stakeholders. Strategic leadership, governance, and policy development with supplementary procedural guidelines have provided the framework for ensuring the appropriate use and access to online reports (Llewellyn, 2003). In addition, regular professional development provided for academics supports and informs staff in accessing, interpreting, and using the online reports for quality improvement.

Unit reports

For the unit survey, unit coordinators and their head of school have online access to Full Unit Reports which show complete analyses of quantitative items and full text of student comments. Using principles of good practice (Powney & Hall, 1998; Watson, 2003), unit coordinators can view this report online, reflect on the student feedback, and compose and publish a response to student feedback outlining what changes may or may not be made in response to student feedback thereby "closing the feedback loop". Unit coordinators are also prompted to close the loop using a section on eVALUate feedback on unit outlines. All staff and students can view all Unit Summary Reports (this report is devoid of student comments) including the unit coordinator's response. These online reports ensure student feedback, and staff reflections are transparent. A website called the "Student Voice" provides general and specific survey results and includes faculty and university-wide strategic initiatives to address student concerns and improve the student experience.

Course and school reports

Heads of schools have online access to all of their school's unit reports at course (degree program) and school level. To assist heads to identify unit strengths and areas needing development, the course and school reports are colour coded using the "traffic light" method: Items achieving 80% agreement or higher are coded green (a very good achievement), items achieving 60 to 80% agreement are coded orange (indicating possible room for improvement), and items achieving less than 60% agreement are coded red (indicating a need for further investigation). These reports are shared with course coordinators and are integral in annual and comprehensive course reviews.

University reports

All staff and students can access university-wide aggregated results ensuring transparency of the data, including a full analysis of participation rates and results, with the added feature of a full analysis of qualitative data using a software package called CEQuery developed

specifically for classifying student comments into themes and subthemes (called domains and subdomains) (Scott, 2005). Qualitative themes are tested against the quantitative results to ensure results are valid.

Reports for the general public

The general public can also access quantitative student feedback aggregated at the level of the whole of course. These data aim to provide external stakeholders such as potential students or parents with students' perceptions and overall satisfaction of courses. This feature ensured the University's eligibility for the LTPF.

Confidential reports

In contrast, the results of the teacher survey are confidential to the teacher who requested student feedback. The named teacher can access their teaching evaluation report online for the purpose of self-reflection and for providing evidence of teaching strengths and weaknesses for professional development needs in performance review, academic staff promotion, and university and national teaching awards.

Using qualitative and quantitative feedback to improve the student experience

Staff acceptance of student evaluation systems is varied, and misconceptions are sometimes expressed by individuals, at school meetings, and at Faculty and University Teaching and Learning Committees. Staff concerns typically relate to a belief that student feedback is biased by (a) which students give feedback (staff believe students who are unhappy with their experience or those with low grades predominantly give feedback); (b) timing, that is, when students give feedback including prior to and after the examination period; (c) mode and delivery of the unit particularly to students enrolled externally and those studying at offshore locations. To address staff concerns, and contribute to the body of knowledge about student evaluation systems and student feedback, continual research on the data, processes, and outcomes is undertaken. Most notably, research has focused on the validation of the instruments (Oliver et al., 2008; Tucker et al., 2012), what students say in evaluation systems (Oliver, Tucker, & Pegden, 2007; Pegden & Tucker, 2009, 2010), student motivation and engagement (Tucker, Oliver, & Pegden, 2007; Tucker & Pegden, 2008), and relationships between student feedback, graduate feedback (Jones & Tucker, 2005), and student outcomes (Tucker, Pegden, & Yorke, 2012).

Student feedback is integral to quality improvement at the University, specifically for improving units each semester and for improving courses through Annual and Comprehensive Course Review processes (Curtin University, 2007; den Hollander, Oliver, & Jones, 2007; Jones & Oliver, 2008). Teachers are encouraged to reflect on student feedback through professional development and with the support of teaching team leaders (including unit and course coordinators) and make changes where appropriate to improve the student learning experience. Making improvements is not always possible without support to teachers to enable effective change. Professional development is provided through resources for improving items on the survey, Foundation of Teaching and Learning programs for all teachers to improve student outcomes, and leadership programs for those in principal roles particularly in designing learning experiences and leading and supporting teaching teams (unit coordinators, course coordinators, and heads of schools). For courses undergoing Comprehensive Course Review, one-to-one professional development and support

is provided by teaching and learning development academics to assist teaching staff develop quality learning experiences for students.

Although student feedback is essential in improving teaching and learning experiences for students and teachers and for assisting staff to engage in scholarly review of their teaching through refection, the quality of learning and teaching should also be based on multiple sources of information. Improving the student experience is most effective when a review of the curriculum is undertaken for the entire course. In 2007, a university-wide project (Curriculum 2010) was commenced focusing on award structures, course sustainability, and course quality ensuring that the University's graduate attributes are contextualised, embedded, and assessed in degree programs. A focused quality improvement process for using student feedback, analysing the student experience and identifying initiatives for improvement was developed and is now embedded through course review. In particular, the University utilises comprehensive course review (which occurs at least every 5 years) to analyse the entire academic course for an award, its regulations, structure, currency of the curriculum, quality of teaching and learning, and so on. Key stakeholder feedback is collected and analysed including the student voice, collected in the unit survey; graduate and employer feedback; and feedback from the academic teaching team (Jones & Oliver, 2008; Oliver, Ferns, Whelan, & Lilly, 2010; Oliver, Hunt, et al., 2010). Graduate, employer, and teaching team surveys were developed to gather and report perceptions of the targeted stakeholders on graduate achievement of graduate attributes, and the degree to which a course assists graduates to be work-ready. These surveys have been adopted by a number of other Australian universities (Oliver, Hunt, et al., 2010).

Where appropriate, further consultation with industry experts, external stakeholders, and professional accrediting bodies may occur and/or focus groups undertaken to provide deeper information about a course. University data including measures of course demand (the profile of students entering the course) and activity (student numbers including whether they are enrolled part time or full time) are analysed. Student performance measures also provide an indication of course quality including measures such as the number of students completing a course, retention rates, and pass rates. Collectively, these measures are useful indicators of teaching and learning quality providing evidence of course strengths and areas for improvement.

Monitoring and evidencing improvements in quality

Improvements in student satisfaction are monitored using graduate feedback in the CEQ and student feedback in the unit survey. From 2008 to 2011, graduate feedback collected using the CEQ indicated substantial improvements compared with other universities within the Australian sector: The Good Teaching scale improved by 14% agreement (students who strongly agree and agree with the question items), the Generic Skills scale improved by 13%, and Overall Satisfaction by 15% agreement. Whilst these achievements cannot be directly attributed to the Curriculum 2010 strategy alone, these trends are noteworthy and have resulted in the improved positioning of the University in Australia. Without the transparent timely publication of student feedback through eVALUate, the Curriculum 2010 strategy would not have been possible.

Improvements at course level are monitored using the eVALUate Aggregated Course Report generated from the unit survey results. Figure 1 shows trend data for these aggregated results (Items 1 to 7 and 11) for a course which undertook comprehensive course review in 2007–2008. Items 1 to 7 report students' perceptions of whether learning outcomes are clear, whether the learning experience, resources, assessments, feedback,
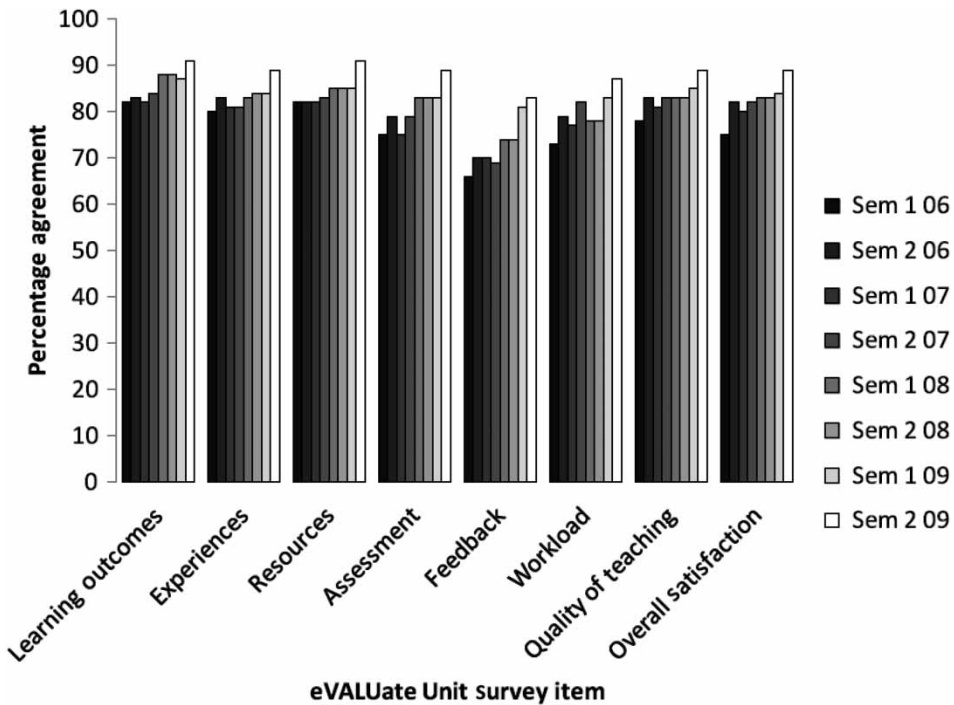
Figure 1.   Aggregated Course Reports for a course showing trends from 2006–2009.

workload, and teaching help their achievement of the learning outcomes, and Item 11 reports student overall satisfaction with their unit. The figure shows that in 2006, prior to course review, students were expressing low agreement with each of the eVALUate items, particularly in assessment, feedback, and workload. At this time, the curriculum was content driven and the teaching approaches were, in places, teacher centred. Qualitative student feedback collected from the unit surveys over 2 years indicated the need for improvement in the design of units, assessment expectations, and assessment standards. These findings were consistent with feedback collected from the graduates and employers. Comprehensive course review focused on a complete review of the curriculum, relevance of content, assessment (resulting in an increase in formative and less summative tasks with less weighting of end-of-semester examinations), variety of assessment tasks to provide greater relevance to learning, and clear alignment of assessments with unit learning outcomes. Case-based learning was threaded throughout the curriculum, and for some academics their teaching was moved towards a student-centred learning approach. Following completion of the review, a significant improvement in student feedback for all units was achieved, particularly in feedback (12% agreement), workload (11% agreement), and overall satisfaction (9% agreement). The improvements were most evident by 2008, the 3rd year following implementation of the new course.

Trend Aggregated Course Report data are monitored annually as part of the Annual Course Review to provide leaders of teaching and learning with an indication of teaching and learning excellence or highlight declining student satisfaction. Teaching and learning successes are used to reward teaching areas and identify suitable teachers to apply for university and national awards. Declining student satisfaction may initiate early

comprehensive course review or provide the impetus to focus teaching and learning strategies aimed to improve the student experience.

Aggregated quantitative student feedback is also used in school reviews, external reviews such as accreditation, evidencing university's performance against its key performance measures, and for evidencing Academic Standards. University improvements have been evident since the implementation of eVALUate in 2005, and university-wide student response rates for the unit survey are normally 43 to 46%. Within the Australian sector comprising 43 universities, this institutional response rate is one of the highest recorded for those using online surveys.

Percentage agreement, aggregated to university level, for all items in the unit survey is greater than 80% agreement with the exception of Item 5 (feedback), which consistently registers slightly below 80% agreement. From 2006 to 2012, the greatest improvements in quantitative percentage agreement in the unit survey were in the items related to feedback, student motivation and learning, quality of teaching, and overall satisfaction (Table 1). Improvements for each item have been steady since implementing eVALUate in Semester 2, 2005. Over the 6-year period, the University has, through its stated philosophy of teaching, aspired to excellence in teaching and learning based on Curtin's learning outcomes philosophy: *Excellence in teaching and learning at Curtin* (Curtin University, 2003). Within this philosophy, Curtin articulated its commitment to student learning through an outcomes-focused approach founded on research-based pedagogical practices including student-centred learning. Numerous university-wide strategies for improving teaching and learning were implemented over the 6-year period, and it is difficult to attribute improvements made to any one project. However, the greatest focus has been on improving the teaching and learning experiences identified by Items 1 to 7 (learning outcomes, experiences, resources, assessment, feedback on learning, workload, and quality of teaching) (Table 1). The notable improvement in student motivation and engagement (Items 8 to 10) may reflect the improvements in course design and learning experiences and the active learning partnership attained by the student-centred learning approach.

Typically, 67 to 69% of unit surveys submitted contain student comments. CEQuery is used to classify student comments into themes (domains and subdomains) (Scott, 2005). This analysis shows that students consistently comment most frequently on methods of learning and teaching in relation to unit design, the quality and attitude of staff, staff accessibility and responsiveness, learning resources, relevance of assessment, staff teaching skills, relevance in unit design, intellectual and knowledge/skills in outcomes, and flexibility and responsiveness in unit design. The findings reveal that three of the six most frequently commented on "most helpful" subdomains refer positively to teachers. Closer analysis in strategic areas is undertaken to inform all staff, particularly the senior executive,

Table 1. Trend in percentage agreement with quantitative items over 6 years.

	What helps achievement of the learning outcomes							Student motivation and engagement			Satis-faction
	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11
	Out-comes	Experi-ences	Resou-rces	Assess-ment	Feed-back	Work-load	Teaching	Moti-vation	Best use	Think about	Satis-faction
Improvement 2006–2012	4.6	4.2	4.5	4.6	8.3	5	6	7.1	6.2	7.2	5.7

on how to improve the student experience by using SPSS Text Analysis for Surveys within each CEQuery sub-domain to explore not only what themes students comment about most frequently but also what they actually say (Oliver, Tucker, & Pegden, 2006).

Future challenges and conclusion

Universities collect student feedback for the purpose of improving the student experience and for monitoring and reporting on teaching and learning quality. The current challenge for universities is to use the data collected, both quantitative and qualitative, to improve teaching quality, the student experience, and student learning outcomes. Survey instruments should be valid, fit for purpose, and focus on the student learning experience if they are to be used for reflective practice, to improve teaching, and to inform curriculum development and review.

University stakeholders need to have confidence that student feedback collected is representative of the student community. Whilst the Australian Council for Educational Research use sampling strategies to administer the AUSSE and University Experience Survey, universities continue to focus on the achievement of high response rates in evaluation surveys. In Australia, some universities have reported a downward trend in university-wide response rates for unit evaluation surveys (Ballantyne, 2012). This trend was discussed at length by survey managers and academics at the 2012 Australasian Higher Education Evaluation Forum. Where universities achieved response rates of at least 40%, teaching staff actively promoted the surveys and informed students on how their feedback was used to improve the learning experience. A decline in response rates was attributed to survey fatigue (including national surveys mandated by the Australian Government), excessive emailing to students, lack of confidence in the anonymity of surveys, and technical problems in administering surveys online. Strategies proposed by some universities included education of students, the use of social media to promote evaluation surveys, and increased involvement and promotion by the student body including the Student Guild. Strategies discussed but not supported by the sector include reward or coercion, withholding grades or giving additional grades for survey submission, and mandatory participation. At the University, senior executives have selected a target response rate of 35% for Faculties and the University. However, at unit level, guidelines are provided to determine whether the results for a unit are representative of the total student group enrolled in the unit. The guidelines state that every student response is valid; each response represents one student's perception and must be taken seriously. In addition, the number of student responses (and response rate) in units of varying sizes is provided to guide stakeholders in determining whether the sample is representative of the opinions of the whole group (using a 95 ± 10% confidence interval). This information is used to assist those interpreting unit results.

The online environment for learning is increasing rapidly at the University, and response rates from units delivered partially online or fully online are higher than for those units and courses where students are enrolled and attend the majority of their classes at the main campus. Strategies to improve student participation in evaluation surveys are relentless; most importantly by motivating and educating teaching staff on their role in promoting the surveys and in closing the feedback loop. Student feedback, particularly overall satisfaction with their learning, is as positive in the online environment irrespective of enrolment mode. Research into the factors that enhance the learning experience for students studying online is underway.

To date, cross-institutional benchmarking activities using student evaluation data have not been possible in Australia due to the variation of surveys and reporting processes across

the sector. The recent uptake of eVALUate by two additional Australian universities will enable benchmarking partnerships and research collaborations at a time when many universities are transforming teaching and learning pedagogies in response to global trends in higher education. Student perceptions of their learning experience, in combination with learning and teaching analytics, will have a significant role in evaluating current practices, transforming and directing future teaching and learning practices.

Tensions may arise between teachers, heads of schools, and senior management when evaluation reports are used for accountability purposes, becoming ritualised in practice, and do not lead to changes in quality teaching and learning practice. Embedding student evaluations into quality improvement processes in universities ensures that the student voice is taken seriously.

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Enhancing Student Feedback and Improvement Systems in Tertiary Education

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&
Chenicheri Sid Nair

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CAA Quality Series No. 5

Introduction

The CAA Quality Series comprises occasional publications, about two or three per year, on topics of interest to practitioners of quality assurance in higher education.

Specifically, the intent of the CAA Quality Series is:
- To contribute to the enhancement of quality practices in higher education in the UAE and more widely;
- To provide a means for sharing insights, research and analysis that is responsive to identified or emerging needs of those with responsibility for quality in higher education;
- To stimulate discussion and reflection on directions, evolution and progress in quality improvement relevant to UAE higher education;
- To provide contributions to the literature on quality assurance in UAE higher education that would otherwise not be available to a wide audience;
- To enhance public knowledge of QA, for agencies, for institutions and for the general public.

Contributions to the Series

Contributions, in Arabic or English, are invited from higher education quality assurance practitioners and educational leaders. The publications are expected to be scholarly and make a worthwhile contribution to thinking on or understanding of quality, addressing or responding to specific short-term policy issues as well as those of more general and longer-term relevance. They may be discussion papers, argue a particular case, or report the results of experiments or experiences. An indicative minimum word-length is 5000 words.

Anyone interested in contributing may contact the series editor, David Woodhouse, on david.woodhouse@mohesr.gov.ae.

The assistance of Ms. Reena Rajiv in managing the presentation and publication of the CAA Quality Series is gratefully acknowledged.

Contributions to this volume from

Australian Universities

University of Newcastle, Australia
University of Western Australia
Curtin University, Australia
University of Technology, Sydney, Australia

United Kingdom Universities and organisation

Birmingham City University
University of Bath
Liverpool Hope University
The Open University, UK
Higher Education Academy, UK

United Arab Emirate Universities

Sharjah University
United Arab Emirates University (UAEU)

Acknowledgement

The main aim of this volume is to share practices in the measurement, reporting and enhancement of student experience at national, institutional, course, and unit of study level. This publication includes contribution from Australia, United Kingdom, and United Arab Emirate (UAE) universities. The Higher Education Academy (HEA) of UK has also kindly contributed a chapter. While the measurement and use of student experience data is well known in some countries, such developments are emerging in UAE region and contributing to quality assurance.

The experience of Australia and United Kingdom is valuable with different levels of development in both countries. This publication will assist UAE universities and other tertiary education institutions in strengthening the measurement, reporting, and enhancement of student experience. The two editors of this volume would like to thank the universities and the HEA for contributing a chapter. We would like to thank the Commission of Academic Accreditation (CAA) for considering our proposal to publish on this important topic.

Contents

Section 1: Australian Experiences

Development of a student evaluation quality culture: the eVALUate experience at Curtin University

Beatrice Tucker, Curtin University, Western Australia

Abstract

The successful development and use of an online student evaluation system has required a significant cultural transformation in teaching and learning at Curtin. An effective quality culture was achieved through leadership with a focus on communication, education and involvement of all stakeholders. All aspects of the system were informed by relevant pedagogy and research into student evaluation of teaching within a university-level outcomes approach to learning. Open and transparent student feedback about student learning informs quality improvement and university-wide strategies to continually improve the student experience at Curtin.

Keywords: student evaluation of teaching and learning, student experience, quality improvement, academic leadership

Background

The student experience in higher education is a culmination of all aspects of university experienced by an individual. This experience includes all aspects of engagement throughout the student life cycle (Coates, 2006; Harvey, 2006; Krause, Hartley, James, & McInnis, 2005), and may include the distinct cultural experience promised by an institution (Baird & Gordon, 2009). Multiple approaches are used in the sector to identify and evaluate the student experience and establish quality improvement approaches. Student, graduate and employer surveys of experiences and outcomes, student progression data (such as retention and pass rates), and employment data are some measures of teaching and learning quality used by universities. In 2009, the Australian Federal Government established the Transforming Australia's Higher Education System policy position as a result of a Review of Australian Higher Education (Bradley, Noonan, Nugent, & Scales, 2008). This review highlighted the need for a strong focus on measuring and monitoring student engagement with a focus on the connection with student's achievement of learning outcomes. New performance indicators have been proposed and a new regulatory body, the Tertiary Education Quality and Standards Agency (TEQSA) was formed in 2011. With the advent of TEQSA, the Australian sector is currently debating the teaching and learning measures of quality relating to the student experience. The sector is also discussing measures for assuring student's achievement of learning outcomes relative to whether these are quantifying inputs, processes or outputs.

Measures that have been proposed include a new survey (the University Experience Survey), refinement of the Graduate Destination Survey, the assessment of learning outcomes and admission testing (Australian Council for Educational Research, 2012; Coates, 2010; Department of Education Employment and Workplace Relations, 2011) and institutions are focusing on evidencing academic and graduate standards using tools and processes.

Student evaluation has been integral to the quality improvement process in universities for over 20 years (Blackmore, 2009; Harvey & Williams, 2010). The use of surveys for quality assurance and enhancement has received mixed responses (Anderson, 2006; Geall, 2000; Harvey & Stensaker, 2008) and whilst there has been a general lack of agreement over the meaning of quality and how it is measured (Brown, Carpenter, Collins, & Winkvist-Noble, 2007; Harvey & Stensaker, 2008; Houston, 2008) student feedback is considered vital in the quality assurance process (Barrie, Ginns, & Prosser, 2005; Blackmore, 2009; Harvey & Williams, 2010; McCormack, 2005; Morgan, 2008; Young, McConkey, & Kirby, 2011). Within the quality improvement framework proposed by Baird and Gordon (2009), student evaluations of their teaching and learning are regarded as a standard assurance mechanism (referred to as normative quality assurance), a process measure which informs the mitigation of risks.

Curtin University is Western Australia's largest and most multi-cultural university with over 47,000 students and including Australia's third largest international student population (more than 40% of students study on or offshore). The University operates out of 16 locations, including Sydney, Malaysia and Singapore and is a major shareholder provider for Open Universities Australia. This chapter describes the events and factors responsible for successfully developing, implementing and embedding Curtin's online student evaluation system (called eVALUate) for the purpose of improving the student experience and for quality assurance. It is well recognised that the development of a quality culture requires organisational change and development (Mustafa & Chiang, 2006). To ensure positive organisational change, the research literature informed all aspects of the process. The following principles outline key features, identified in the literature, that were used to lead the change of Curtin's teaching and learning quality culture: 1) development of a vision and strategy; 2) establishment of a sense of necessity; 3) creation of a guiding leadership team; 4) communication; 5) development of a shared commitment; 6) generation of early successes; 7) consolidation and embedding; and 8) re-evaluation of the system (Mustafa & Chiang, 2006). These principles enabled the successful and largely positive adoption of eVALUate namely: the development of a vision and a need for change; leadership; pedagogy; improving the student learning experience; communication and education; recognition of early successes; consolidation; and evaluation.

Development of a vision and a need for change

A number of events provided the impetus for Curtin to develop a university-wide

evaluation system. The University recognised that quality monitoring should be concerned with improvement and enhancement of student learning (Hodgkinson & Brown, 2003) and that the goal of higher education is to enable the transformation of students, providing them with the skills and abilities to actively contribute to a rapidly changing world (Ramsden, 2003). In Western Australia, a shift in the secondary education system to outcomes-based education and a focus in student-centred learning in the higher education sector provided Curtin with a renewed focus. Curtin developed a learning outcomes philosophy: Excellence in teaching and learning at Curtin (Curtin University, 2003). The tenets within this philosophy articulate Curtin's commitment to student learning through an outcomes-focused approach whereby learning experiences are designed to help students achieve the learning outcomes at unit and course level. The tenets specified that teaching and learning is a partnership between staff and students and that systemic evaluation of teaching and learning is used to ensure quality. The development of the University's stated goals in teaching and learning was at the centre of the vision for developing eVALUate.

In 2000, the Australian Universities Quality Agency (AUQA), formed by the Australian Ministerial Council on Employment, Education, Training and Youth Affairs, was established as an independent, national quality assurance agency. AUQA was involved in the promotion, auditing and reporting on quality assurance in institutions using a process of institutional self-evaluation (Chalmers, 2007; Woodhouse, 2003). A recommendation from Curtin's first AUQA audit was "that Curtin develop efficient mechanisms for tapping student opinion, translating the feedback into action, and informing students of outcomes and changes made" (Australian Universities Quality Agency, 2009; Sarah, 2003, p.35). At this time, Curtin had no uniform system or instrument for gathering student feedback on units or teachers for university-wide reporting. The University employed a number of instruments (online and paper-based) for student feedback on teaching and learning, aligned with the industrial agreements of the day. Adaptations of the Course Experience Questionnaire (CEQ) were implemented by Curtin Business School (called the Unit Experience Survey) and the School of Physiotherapy (called the Course Experience on the Web) for gathering feedback on units (Dixon & Scott, 2003; Tucker, Jones, Straker, & Cole, 2003). Curtin's Annual Student Satisfaction Survey included some CEQ items to gather feedback on students overall experience of their course. Feedback on teaching was gathered using the Student Evaluation of Educational Quality (SEEQ) paper-based survey on a voluntary basis and the results were confidential to the requesting teacher. The AUQA panel reported that student's did not value the survey and felt over surveyed (Australian Universities Quality Agency, 2009; Sarah, 2003, p.35).

Fortuitously, the Australian government announced performance based funding in 2003 with the introduction of the Learning and Teaching Performance Fund (LTPF) using graduate feedback on teaching and learning, graduate outcomes (employment and further studies), and student progress and retention rates (Department of Education Science and Training, 2004). Eligibility for the LTPF was that universities were required to have a systematic student evaluation system including the reporting of student feedback to the general public. Curtin's failure to be eligible for LTPF

funding in the first round of the scheme and poor ranking within the Australian sector provided the impetus for change within the University and a renewed focus on teaching and learning. These factors provided the sense of necessity and urgency to develop and instigate eVALUate.

Leadership

In order to build an effective institutional online evaluation system, Curtin recognised that a cultural transformation was required. The research literature states that the essential criteria for building an effective quality culture in teaching and learning and evaluation include: leadership, policy and planning, information and analysis, people, client focus, key processes and outcomes (Marshall, Orrell, Cameron, Bosanquet, & Thomas, 2011; Sorenson & Reiner, 2003). The complex roles and skills demonstrated by the leaders in managing the development and implementation of eVALUate were consistent with the managerial leadership capabilities described within the Competing Values Framework (CVF) (Amey, 2006; Harvey & Stensaker, 2008; Zulu, Murray, & Strydom, 2004) and are highlighted within this paper.

In 2005, a Student Evaluation of Learning and Teaching (SELT) Steering Committee was established to lead the development of a university-wide evaluation system comprising: the Pro-Vice Chancellor Adacemic (PVCA) (Chair); Deans of Teaching and Learning; academic representatives from each teaching faculty; a Student Guild representative; academic experts in survey design; an elected academic representative; support services and key staff from the Office of Teaching and Learning. The academic staff from the Office of Teaching and Learning formed the guiding leadership team who led the developments, and communicated continuously with the wider university community. The SELT Steering Committee met fortnightly and reported to the University Teaching and Learning Committee and subsequently to Academic Board. The task of the Committee was to oversee the development and implementation of a university-wide system for gathering and reporting student perceptions of learning and teaching. Consistent with most universities, the system was designed for: 1) the purpose of quality improvement, 2) informing professional development, 3) rewarding academic performance, 4) informing promotion processes, and 5) as key performance measures for university executive and those discharged with leadership in teaching and for learning outcomes (Barrie, Ginns, and Symons, 2008; Shah and Nair, 2012).

The leadership team focused on the enhancement of the student experience using a transformational quality approach: putting the student at the heart of the process, using a transparent bottom-up approach to continuous improvement and being responsive and open as a means of gaining trust (Wilson, Lizzio, & Ramsden, 1997). In order to enact transformational change, the leadership had to ensure they understood the culture and values of the organisation (Amey, 2006). A major feature to the success of the leadership team was their extensive experience as teaching academics in higher education giving credence to their work. Adequate resourcing and funding ensured the successful development of the system, subsequent system

enhancements and ongoing operations. Consultation and input with multiple service areas ensured interconnections between the university systems and technologies were successfully integrated to ensure the useability for students and staff. These interconnections and the relationships built across the university provided the basis for levering change in all contexts of practice, that is, at the university, faculty, school, course and unit level (Amey, 2006; Marshall, et al., 2011). The creativity and communication skills to bring about a change in culture and to acquire adequate funding were examples of the innovator and broker CVF leadership roles demonstrated by the leaders (Harvey & Stensaker, 2008; Zulu, et al., 2004). Most notably, the leadership team:

- ensured eVALUate integrated with the University's internal data gathering and reporting systems and other related systems;
- liaised with Information Management Services to construct the online system within the student portal, ensuring the useability and reliability of data gathering and reporting facilities; and
- worked with central operational areas such as Staff Services to ensure all teaching staff (sessional and contract teachers), on and off-shore have equitable access to eVALUate.

Leadership by the PVCA was essential in negotiating with the staff union in establishing the procedures for reporting student feedback (Den Hollander, Oliver, & Jones, 2007). The union expressed concerns over the ownership and reporting of student feedback data (qualitative and quantitative), identification of teaching staff in reports and the privacy of student feedback for use in academic performance. Considerable effort was made to ensure a focus on quality enhancement and the transparency of reports for all relevant stakeholders. A commitment to close the feedback loop for students also guided the values and procedures that shaped the system and practices. The focus on getting the task done, whilst ensuring people were cared for and developed are examples of the developer and monitoring roles demonstrated by the leaders (Harvey & Stensaker, 2008; Zulu, et al., 2004).

Pedagogy

Leadership and pedagogy was provided by key academics from the Office of Teaching and Learning. Evidence-based practice informed all aspects of the system; the development of the instruments, reporting of data and method for closing the feedback loop with students. A comprehensive scan of successful evaluation systems in Australia and internationally and a comprehensive review of the literature in the field of higher education pedagogy in outcome-focused education, student learning and evaluation systems was undertaken to determine best practices in student evaluations. The literature indicates that, in order to evaluate the quality of teaching, the quality of learning and subsequent achievement of learning outcomes should be evaluated (Barrie, 2000; Carey & Gregory, 2003; Huba & Freed, 2000). This learning outcomes principle and the acknowledgement of the teacher and learner partnership in student-centred learning were at the heart of all developments (Archer, Cantwell, & Bourke, 1999; Bandura & Schunk, 1981; Candy, Crebert, & O'Leary, 1994; Coates,

2005; Fenwick, 2001; Pintrich, Roeser, & De Groot, 1994; Ramsden & Entwistle, 1981; Scott, 2005; Zhao & Kuh, 2004).

An effective evaluation model and quality culture for improving teaching and learning had operated in the School of Physiotherapy since 1999 (Tucker, et al., 2003) and the experiences learnt from this model were exploited. This online system featured a culture of student and staff reflection on teaching and learning, transparency of results (student comments were available to all students and academics at the School), open discussion and sharing of teaching and learning strategies, closing the feedback loop and a shared commitment to quality improvement. Sizable improvements in graduate feedback on teaching quality, attainment of generic skills and overall satisfaction were achieved in CEQ and were directly attributed to the culture of improvement within the school (Tucker, Jones, & Straker, 2008). Experiences gained from the Physiotherapy evaluation system strengthened Curtin's decision to adopt a system that: asks students what they bring to the teaching and learning partnership; is transparent in reporting results; closes the feedback loop and commits to quality improvement.

Improving the student learning experience using the eVALUate system

Students can give feedback about their unit and their teacher(s) using two separate surveys: the eVALUate unit survey and the eVALUate teaching survey. The development and validation of each survey, including pedagogical underpinnings have been published elsewhere (Tucker, Oliver, and Gupta, 2013 in press; Oliver, Tucker, Gupta, and Yeo, 2008). Unlike most student evaluation of teaching surveys, the eVALUate unit survey focusses on student perceptions of what is helping or hindering their achievement of learning outcomes (Oliver, Tucker, Gupta, & Yeo, 2008).

In brief, the eVALUate unit survey is automatically available online for all undergraduate and postgraduate coursework units at all Curtin's Australian campuses and all major offshore campuses. Students enrolled on a full time basis normally enrol in four units each teaching period. Each year there are six main eVALUate events with additional events created to cover almost every teaching study period. All units are evaluated each time they are available in any study period. The teaching survey is only available for student feedback when requested online by the teacher seeking feedback. For any unit, there may be one or more teachers, and students can give feedback for as many teachers as they choose within the one unit.

Online aggregated reports are available to all students, staff and the general public at various levels (unit or program) and more detailed reports containing quantitative and qualitative feedback for each teaching location and mode is available to the unit coordinator and head of school. Curtin executive are provided with the analysed data with recommendations for improvement to influence student learning. Course and

unit eVALUate reports are used in all Annual and Comprehensive Course Reviews. The eVALUate reports are disaggregated so that students from different campuses, locations and modes of study are represented. This provides unit coordinators and heads of schools with fine grained information about all student experiences so that improvements are focused (Den Hollander, et al., 2007; Jones & Oliver, 2008). Additional reports are produced manually for senior executive, faculties, schools, offshore locations for monitoring and reporting on teaching and learning quality and for school reviews.

The effective implementation of eVALUate ensured the success of course review and led to a subsequent university-wide project of curriculum renewal called Curriculum 2010. Both eVALUate and the processes that have been developed as part of Curriculum 2010 are now integral to quality improvement at Curtin (Den Hollander, et al., 2007; Jones & Oliver, 2008; Oliver & Ferns, 2009; Oliver, Jones, & Ferns, 2010; Oliver, Jones, Tucker, & Ferns, 2007). A full description of the system, how it works, reports available online, the mechanism for closing the feedback loop with students and the use of qualitative and quantitative feedback to improve the student experience is published elsewhere (Tucker, In press).

University policy and procedures were developed to provide a framework in which teaching and learning is evaluated using eVALUate. The procedures outline the access to reports and use of eVALUate results to for improving the student experience, for staff reflection and scholarship, benchmarking, evidencing teaching performance and recognising teaching excellence.

Communication and education

The leadership team communicated continually with the wider community throughout the development and implementation stages of the system. The framework developed by the International Association for Public Participation best describes the factors resulting in a high level of impact for Curtin community; that is, to inform, consult, involve, collaborate with and empower students and staff (IAP2, 2012). In particular, communications focused on the shared commitment and vision, strategy and pedagogy. A series of open forums were conducted at the university to ensure widespread dissemination of information, foster discussion and to listen to concerns that could be fed back to the Steering Committee. Information papers were disseminated regularly and progress reports presented at University, Faculty and School Teaching and Learning Committees. Such strategies were paramount in ensuring staff understood the internal and external demands for quality and could respond optimally to the cultural change associated with the new evaluation system (Zulu, et al., 2004).

By ensuring staff and student were adequately informed, consulted and involved in the development and implementation of the system, concerns and aspirations raised by the University community were acknowledged. Where possible these concerns were acted on and feedback was provided back to the community to ensure

stakeholders were advised on how their involvement had influenced decisions. The participatory decision-making strategies undertaken ensured collaborative partnerships whereby stakeholders (students and staff) were involved in advising and formulating recommendations and innovative solutions to the eVALUate system.

When piloting eVALUate, online surveys for students and staff were undertaken to gather feedback on the system and tools. The team worked with student groups to ensure that the survey items were valid and reliable, comprehensive yet sufficiently succinct to ensure student participation. The team worked with senior executive, heads of schools, and deans of teaching and learning to ensure eVALUate fulfilled accountability requirements and the data was usable for the demands of continuous quality improvement. Consultation with statisticians ensured the statistical validity and reliability of the survey instruments. Communication and collaborative partnerships with senior executive and providers in offshore locations ensured the successful rollout of eVALUate offshore. This involved visits and meetings with students and staff at Australian and key offshore locations.

The coordination and management of eVALUate is situated within the Office of Teaching and Learning at the University. This unit provides leadership and support for teaching and learning through its activities in academic professional development, research and scholarship, course management, curriculum design and review. The organisational position of this unit is vital for the creation of a culture of support and continuous improvement for academics in the evaluation process. Leadership within the university is provided from the Office through the development of teaching and learning strategic plans, collaborations with national and international leaders in the field of teaching and learning, and scholarly activities resulting in strong networks with multiple areas of the university and the empowerment and support of academic staff.

Professional development and support is provided to academic staff in multiple ways. Comprehensive resources have been developed to provide guidelines for unit, course and faculty staff on their roles and responsibilities on the: use of eVALUate reports; interpretation of results and response rates (representativeness of sample); and how they might assist teaching colleagues to use eVALUate results to improve student learning. Similar guidelines were also developed for promotion panel members. Resources have been created for improving practice associated with each eVALUate unit survey item. The University's Teaching and Learning booklet, an annual publication which updates staff on all teaching and learning matters, includes a dedicated chapter on eVALUate, ways to close the feedback loop for students and practical tips for improving teaching practice using eVALUate results. Professional development for all staff is provided regularly through the Foundations of Teaching and Learning Program and a range of leadership programs (Unit Coordinator, Course Coordinator and Heads of Schools Programs). Professional development for leadership was essential in effecting cultural change in teaching and learning that would effect evaluation adoption and use (Marshall, et al., 2011).

Recognition of early successes

An important strategy in changing culture is the recognition and reward of early achievements. Curtin celebrated a number of achievements resulting from the implementation of eVALUate. Most notably, early success was the improvement in Curtin Ranking in Australia in 2007 and 2008 and the success in LTPF, receiving $500,000 funding from the Federal Government in 2007 (Armitage, 2006). Significant improvements in student satisfaction were evident at course, faculty and whole of university level and publicised through the achievement of a University and National Citation Award (Amey, 2006).

Curtin was commended by AUQA in 2009 for the development and implementation of the student evaluation system, eVALUate, to improve learning and teaching. The Panel commended the University for developing robust evaluation instruments, their systematic use across the University and acting on the results to sustain continuous quality improvements in a range of areas at the University (Australian Universities Quality Agency, 2009). The 2009 AUQA Panel confirmed the positive impact which the eVALUate unit survey had on learning and teaching. Specifically, the AUQA comments affirmed: 1) the system's capacity to obtain student feedback (from all campuses and students from partner institutions; 2) the mandatory use of eVALUate; 3) the publication of unit results for all Curtin students and staff; 4) the online system for closing the feedback loop for students; 5) reporting through university, faculty, school and campus level committees; and 6) the use of eVALUate results for academic staff work planning, promotion purposes and rewards to staff. The Panel confirmed the use of student feedback for the purpose of quality improvement: from addressing poor teaching through the use of the 'traffic light' system, for making curricular and pedagogical changes in units, to its use in annual and comprehensive reviews. The Panel also confirmed the processes established for quality assurance: the regular reporting mechanisms, monitoring and assessment of progress against the Strategic Plan and annual Operational Plan and the achievement of key performance indicators. The Panel noted the monitoring of key performance indicators by the faculties that were reported regularly at Academic Board, and the active, systematic and comprehensive approach to the monitoring of student feedback and academic standards at open forums such as Academic Board monitoring meetings.

Consolidation

The acceptance of eVALUate is largely positive, although misconceptions and concerns are sometimes expressed by individuals. To address these concerns and to further contribute to the knowledge on student evaluation of teaching and learning, research on the system and data is ongoing. To date, the research has focused on the validation of the instruments (Tucker, Oliver, and Gupta, 2011; Oliver, Tucker, Gupta, and Yeo, 2008), which students give feedback and what they report in evaluation systems (Oliver, Tucker, and Pegden, 2007; Pegden and Tucker, 2009; Pegden and Tucker, 2010), student motivation and engagement (Tucker, Oliver, and Pegden 2007;

Tucker and Pegden, 2008), and relationships between student feedback and graduate feedback (Jones and Tucker, 2005) and student outcomes (Tucker, Pegden, and Yorke, 2012). Biannual University Aggregated Reports are accessible online for all students and staff. This report provides a full analysis of the response rates, quantitative and qualitative results of the eVALUate unit survey at the University and Faculty levels for each semester and includes five year trends. This analysis details which demographic subgroups participate in eVALUate, the percentage agreement for each subgroup and reports on the CEQuery analysis of the comments made by students on the best aspects of their learning and what they believe should be improved (Oliver, Tucker, & Pegden, 2006, 2007; Scott, 2005). Key research findings from the eVALUate data are also outlined in this report and have resulted in increasing confidence and acceptance by staff in the eVALUate surveys and tool.

Promotion of student evaluation to students and staff is relentless within the University (via presentations, student publications, Curtin diaries and calendars, postcards, posters, emails, workshops and Curtin websites) and to the wider community (particularly at conferences and through journal publications). eVALUate reports were embedded into subsequent University-wide initiatives, such as Curriculum Quality Enhancement and Curriculum 2010, and are now integral to indicators which focus on improving student learning within in the Teaching and Learning Enabling Plan.

Evaluation

eVALUate has influenced students' overall academic experience of higher education because it focuses on learning, it shows that student feedback is valued, and ensures that every student has the opportunity to engage in evaluation. Engaging students in the partnership of teaching and learning has provided them with the opportunity to give anonymous feedback on their learning. Students feel they have a voice, that collectively they can make a difference to their learning experiences and that their views are respected:

- The scope of eVALUate ensures a wide range of issues can be accessed and then improved on or continued by tutors, lecturers and university management to provide the best service for students (Student Guild).
- eVALUate is an easy way to get our views across and you know that you'll be heard (Student)
- I think eVALUate gives the opportunity for students to have a say and facilitate change where needed and also to acknowledge the good things as I believe in both positive and constructive criticism (Student).

Since the implementation of eVALUate, students are reporting that their learning experiences have improved (from 2006 to 2012). Aggregated scores for Item 11 (Overall, I am satisfied with this unit) from more than 40,000 survey submissions each semester show that there has been a steady and significant increase in student agreement by 5.7% over the six year period. The eVALUate unit survey also asks students to reflect on their contribution to learning (Items 8-10). Students have

reported a significantly higher percentage agreement with these items, particularly in student motivation (I am motivated to achieve the learning outcomes in this unit) where there has been an increase of 7.1%. Item 5 (Feedback on my work helps me to achieve the learning outcomes) has made the greatest improvement over time (8.3%) and Item 7 (The quality of teaching) is notably higher (6.0%).

Student response rates are also increasing. The target response rate (35%) set by Senior Executive was achieved in two years and since 2008, University-wide student response rates for the unit survey are typically 43-46%. The focus for Curtin has been on achieving representative response rates at unit level. In 2012, 58% of units with enrolment numbers greater than 100 achieved a representative response rate (that is, staff can be 95% confident that the actual percentage agreement is within 10% (±) of the observed percentage agreement for the total student group enrolled in the unit).

The following statements represent the views of Curtin students and senior executive:

- eVALUate acts to enhance the student learning experience at Curtin by providing accurate feedback to all levels of the university. This has benefited the university by indicating the changing needs of students faster, allowing for more accurate adjustments in the learning culture and ensuring that Curtin is at the cutting edge of tertiary education (Student Guild)
- The eVALUate reports are fantastic and have made a huge impact on my role and the constructive work I am now able to do with staff regarding teaching and learning. eVALUate is so objective and easy to use. I am able to discuss with each staff member their unit's performance, and offer feedback and suggestions on areas which can be improved. Together we are able to identify why a particular aspect of the unit has either improved or where improvements are needed based on the previous semesters results and this discussion is positive, non-judgemental and developmental. In some areas in the School we have already been able to make improvements for student learning and I have found the staff respond well to the reports. Lecturers are including documentation of their changes to the units, based on the feedback they have received through eVALUate, in their next unit outline, so that students can see feedback is worthwhile (Head of School).
- At our Offshore Campus, staff have recognised the great potential of eVALUate to assist them in responding to student feedback on units of study. eVALUate enables staff to review and separate unit design issues (units which are designed by the Bentley home campus) from those of teaching quality and delivery of units at the offshore campus. Staff are now able to conduct unit reviews using eVALUate as a basis to provide suggestions for design change and at the same time identify strategies to improve teaching and learning to assist student achieve stated learning outcomes (Dean of Teaching and Learning, Offshore Campus).
- I am writing to comment on the impact of eVALUate. In my view, this program has been the most important macro development at Curtin in Teaching and Learning. The design of the system is excellent and implementation has been very smooth. It gives us for the first time a way of identifying major weaknesses and correcting them (Pro-Vice Chancellor, 2006).

The uptake of academic staff requesting teaching surveys is increasing annually. Currently nearly 2000 teaching surveys are requested each semester and in 2011, over 19,000 teaching surveys were submitted by students in a semester event. For the unit survey, over 45,000 surveys are submitted each semester. Continued monitoring, system enhancements and innovations ensure that eVALUate continues to meet the needs of Curtin stakeholders (Harvey & Stensaker, 2008; Zulu, et al., 2004).

Although there is considerable variability in systems and instruments used for surveying the experience of students in their units across the higher education sector (Barrie, Ginns, & Symons, 2008), the recent uptake of eVALUate by other Australian universities will enable the benchmarking of students reported experiences in teaching and learning and cross-institutional research into teaching and learning.

Future Challenges and directions

Curtin has now been using the eVALUate system for seven years and data from the system is embedded within the quality culture. Higher institutions are currently exploring new and innovative ways to transform teaching and learning in response to global trends particularly related to the rapid increase in the availability of interactive learning technologies. Learners are increasingly embracing independent learning opportunities through free, online educational offerings. Students' perceptions of their learning through new approaches, settings, technologies and pedagogies will be essential to direct future teaching and learning practices.

Whilst student feedback is an important measure that informs quality, there is considerable debate within the sector about other measures of student performance, engagement and outcomes particularly in relation to student transformation through learning (Gvaramadze, 2011). Understanding student perceptions of their learning and teaching will provide universities with a better understanding of the connection between their experience and student outcomes (Arthur, Tumbré, Paul, and Edens, 2003; Davidovitch and Soen, 2009; Duque and Weeks 2010; Mustafa and Chiang 2006; Spooren and Mortelmans, 2006; Stark-Wroblewski, Ahlering, and Brill 2007; Tucker, Pegden, and Yorke, 2012). A systematic approach will be needed to determine the effects of educational initiatives, innovations and pedagogies. An evidence based approach, including best practice, pedagogy and analytics on current and past practices will not only ensure appropriate decision making in the development of future teaching and learning strategies, but also better understand and optimise learning and educational transformation in the environments in which it occurs.

Conclusion

eVALUate, an online student evaluation system has been adopted and embedded at Curtin and has brought a significant cultural shift in thinking and practice in teaching and learning. That shift is centred on moving away from thinking about specific teaching practices, to focussing on student learning. Students are reporting increased

levels of satisfaction in their learning experiences and greater student engagement and motivation. The implementation of this system has been informed by, and contributed to, research into student evaluation of teaching within a university-level outcomes approach to learning. Open and transparent student feedback about student learning has provided a strong focus for quality improvement at Curtin and the development of strategies to improve the student experience.

Author bio

Beatrice Tucker is the Evaluation Manager in the area of Curtin Teaching and Learning and has been integral to the development, validation, implementation and evaluation of eVALUate, Curtin's online student evaluation system since 2005. She provides leadership for the area and is responsible for the educational guidance and support at all levels for academic staff at Curtin. Her research publication areas include the evaluation of teaching and learning, undergraduate student sources of stress, cardiopulmonary physiotherapy science and its clinical application.

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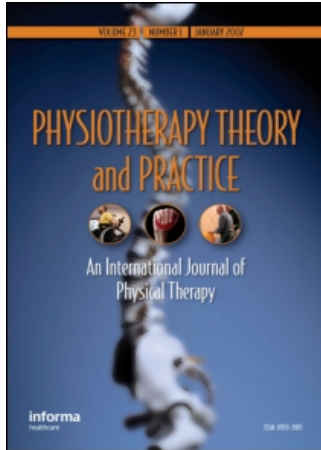
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Physiotherapy students' sources of stress, perceived course difficulty, and paid employment: Comparison between Western Australia and United Kingdom

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Physiotherapy students' sources of stress, perceived course difficulty, and paid employment: Comparison between Western Australia and United Kingdom

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Physiotherapy education is changing, and educators are increasingly concerned about the levels of stress observed in students. Considerable research has investigated stressors in medical and nursing students; however, studies of physiotherapy students were conducted more than a decade ago. This study examined the sources of stress, perceived course difficulty, and hours of paid employment in undergraduate physiotherapy students in Western Australia (WA) and the United Kingdom (UK). The Undergraduate Sources of Stress questionnaire was administered to students in all years of Bachelor of Science (Physiotherapy) programs (n=249 WA; n=161 UK) and a Master of Physiotherapy (graduate entry) program (n=24 WA) with an overall response rate of 70%. Academic concerns were rated highest for all students, particularly the amount to learn, time demands of the course, and conflict with other activities. The course was perceived to be more difficult than expected by 71% of students. Although the mean (SD) hours per week worked in paid employment by WA and UK students is 12.52 (13.90) and 7.16 (4.02), respectively, there was no correlation between any stress subscale and number of hours worked. Reducing the amount of content and revision of the outcomes of physiotherapy curricula could potentially reduce academic stress.

Introduction

Physiotherapy education is undergoing change in response to changes in teaching and learning practices, the rapid increase in knowledge in the profession, changing health care needs, changes in career structure, the exponential growth of knowledge in health and health care management, and professional requirements in the workplace (Crosbie et al, 2002; Struber, 2003). The results of course evaluation instruments administered within universities indicate that students describe their undergraduate education as demanding and academic requirements as stressful (Tucker, Jones, Straker, and Cole, 2003). The Graduate Course Experience Questionnaire (GCEQ) is administered to all graduates from Australian universities (Ainley and Johnson, 2000), and results indicate that physiotherapy graduates rate academic workload as being very high. Physiotherapy education has high academic, physical, and clinical demands and requires the acquisition and application of a large body of theoretical knowledge and clinical and interpersonal skills.

High levels of stress have been reported in different groups of health science students including

medical students (Guthrie et al, 1998; Guthrie et al, 1995; Hojat et al, 1999; Lee and Graham, 2001; Pickard, 2000; Radcliffe and Lester, 2003; Stewart et al, 1995; Vitaliano, Russo, Carr, and Heerwagen, 1984; Vitaliano et al, 1985; Wolf, 1994), nursing students (Elliott, 2002; Lo, 2002; Tully, 2004), dental students (Humphris et al, 2002), occupational therapy students (Everly et al, 1994), and other undergraduate university student groups (Aktekin et al, 2001; Beck et al, 1997; Fraser and Tucker, 1997; Stilger, Etzel, and Lantz, 2001; Tomoda et al, 2000). Mental health problems are commonly associated with high levels of stress and anxiety (Firth, 1986; Guthrie et al, 1998). Using the Stress Incident Record, developed by Keenan and Newton (1985), Firth (1986) found that in addition to the stress of examinations, students identified relations with consultants, talking to patients, effects on their private lives, presenting cases, and dealing with death and suffering were the most stressful items for medical students compared with other students. The same instrument was used by Guthrie et al (1995), who identified the main sources of stress for first-year medical students as workload, dissection, problems with tutors, and incidents causing negative comparisons with peers.

High levels of academic stress have been reported in physiotherapy students (Francis and Naftel, 1983; O'Meara, Kostas, Markland, and Previty, 1994). O'Meara et al (1994) used the Academic Stress Scale and Health Index to determine the academic stress levels in entry-level master's and bachelor degree students in their first and second years of their programs. The Academic Stress Scale comprises 35 academic stressors that subjects rated on a scale of 1 to 1,000 compared with a universal stressor (taking an examination rated at 500). The highest stress reported by students was studying for wrong material, followed by studying for examinations. The findings of this study were compared with those of Kohn and Frazer (1986) who, using the same instruments, found that students in health-related courses were more stressed than other students in the university (e.g., business and education).

Stress in physiotherapy students associated with other factors of university life has been examined by using a questionnaire containing 27 items comprising seven categories: academic, financial, clinical, faculty and administration, personal, research, and drugs (Francis and Naftel, 1983). Frances and Naftel found that academic stress factors (examinations, grades, quantity of class work, long hours of study, and lack of free time) were the most stressful items identified. Physiotherapy students reported dramatic changes in their lifestyle as a result of demanding educational requirements, particularly with relation to decreased time students spend with family (Graham and Babola, 1998).

Physiotherapy courses present some challenges that are similar to medical courses in general, previous questionnaires used for health science and medical students do not investigate sources of stress in undergraduate students in the areas of academic demands, financial and personal issues with items relevant to contemporary education. An Undergraduate Sources of Stress (USOS) questionnaire was developed for the purpose of this study (Blackmore, Tucker, and Jones, 2005). See Appendix.

This study arose out of staff observations and concerns regarding the levels of stress in physiotherapy students at two universities (Curtin University of Technology, Western Australia and the School of Health Professions at the University of Brighton, United Kingdom). In any one year, staff estimated that 15–18% of students display symptoms of depression or poor coping skills. These students often choose to approach a member of staff and may then be referred to university counseling services. However, the process currently works on an ad hoc basis, and there are few systematic structures in place to prevent these problems from arising or to support students.

The aims of this study were to identify the sources of stress in physiotherapy students enrolled at two Universities and to determine whether subgroups of the student population identify different sources of stress. This study was part of a larger research project that investigated the relationships between sources of stress, coping strategies, and social support as predictors of depression in physiotherapy students.

Methods

Subjects

All entry-level students at the School of Physiotherapy at Curtin University of

Technology, Western Australia (WA) and the School of Health Professions at the University of Brighton, United Kingdom (UK) were eligible for inclusion in the study. Curtin has two entry-level physiotherapy programs: the Bachelor of Science (BSc) and the Master of Physiotherapy (MPhysio) (graduate entry) programs, and the University of Brighton has a BSc (Honours) program. There were no exclusion criteria.

The BSc program for physiotherapy at Curtin comprises 8 semesters over the duration of 4 years and the MPhysio program comprises 6 semesters over 2.25 years. Students in the MPhysio program have a previous bachelor's degree. The BSc (Honours) program for physiotherapy in the UK comprises 6 semesters over 3 years.

Ethical approval was obtained from both university ethics committees. Students were given letters several days prior to data collection that outlined the purpose of the study, described the data collection procedures, and informed them of the voluntary nature of the study. Students were assured that their information was confidential and anonymous and that participation had no impact on grades or progression in the course. There was no coercion to participate in the study. Teachers, including the authors, were not present during data collection and were unaware of which students participated in the study. Completion and return of the questionnaire confirmed their consent.

Procedure

Data collection for all students occurred while students were on campus in April 2002. This period translates to week 9 of semester 1 at Curtin and week 5 of semester 2 at Brighton. To ensure student anonymity, two external research assistants conducted the distribution and collection of the questionnaire.

Assessment instruments

The questionnaire comprised: 1) a demographic section including sex, place of origin prior to commencing the course (rural, city, international), whether English was their first language, number of hours spent per week in paid employment, perceived difficulty of the course, year of the course and 2) the USOS questionnaire. The USOS questionnaire contained 18 items in three subscales and one additional item about overall level of stress during the course. The three subscales were: 1) financial (5 items), 2) personal (7 items), and 3) academic (6 items). The instructions were: *"Reflect on your years as a student in physiotherapy. To what extent was each of the following a source of stress to you during those years?"* Each item was rated on a 0 to 4 scale: not at all (0), a little (1), somewhat (2), quite a bit (3), and a great deal (4).

Statistical analyses

Descriptive statistics were used to describe the demographic information. Unless otherwise stated, values given in the results are means, standard error of the mean (SEM), and standard deviations (SDs).

Means were compared by using ANOVA. Pearson's correlation was undertaken to determine the relationship between hours of paid employment, perceived course difficulty, and sources of stress. Repeated-measures ANOVA and factor analysis with varimax rotation were used for generating the ranking of items within each subscale. All statistical analyses were based on an alpha level of 0.05, unless otherwise stated, and were conducted by using the Statistical Package for the Social Sciences (SPSS v12.0.1).

Results

Demographics of the WA and UK physiotherapy students are shown in Table 1 and include the response rates for each year of the BSc programs and MPhysio program. Because of the relatively short geographical distances, UK students' origin was categorised as either city or overseas and not rural or other city, which reflects the university's enrollments. The response rate for all students surveyed was 70% (434 of 620). No questionnaires were incomplete.

Seventy-one percent of students perceived the course to be more difficult than they had expected (Table 2).

Seventy-six percent of physiotherapy students from WA work in paid employment compared to only 16% of physiotherapy students in the

Table 1. Response rates and demographics of the physiotherapy students from Western Australia and the United Kingdom.

	Bachelor of science program year level							Master of physiotherapy
	1		2		3		4	
Country	WA	UK	WA	UK	WA	UK	WA	WA
Response rate (%)	88	95	63	54	61	67	63	71
No. of respondents	84	72	60	42	53	47	52	24
Percentage of male students	27	16	15	6	14	11	15	10
Origin								
Perth city (WA) or UK	55	67	39	41	27	43	29	9
Overseas	8	5	12	1	11	4	7	10
Rural Australia	18		7		13		14	1
Other city in Australia	3		2		2		2	4
Overseas student – English not first language	4	2	7	0	9	2	4	0

WA = Western Australia; UK = United Kingdom.

UK. The mean hours per week of paid employment worked by students in each year of each program are shown in Table 3. The mean (SD) hours per week worked in paid employment each week by physiotherapy students are 12.52 (13.90) in WA and 7.16 (4.02) in the UK. For those WA students who work in paid employment, 54% work between 6 and 15 hours each week (Table 4). There was no correlation between any of the sources of stress subscales and number of hours worked.

Major sources of stress

The sources of stress for all physiotherapy students in each year of the physiotherapy programs are shown in Figure 1. All students identified academic stress as the greatest source of stress, and this was significantly greater than financial ($p < 0.001$) and personal ($p < 0.001$) stress. The students reported their academic stress as a score that equated to between levels of "somewhat" and "quite a bit." There was a significant correlation between academic sources of stress and perceived level of course difficulty ($S_{(431)} = 0.329$, $p < 0.001$).

WA students reported significantly higher levels of academic stress in the first ($p = 0.01$), second ($p = 0.003$), and third ($p = 0.04$) years of the BSc program compared with fourth year. Master of Physiotherapy students reported significantly higher levels of academic, financial, and personal stress than WA BSc students (academic, $p = 0.04$; financial, $p < 0.001$; personal, $p = 0.02$) and UK BSc (Honours) students (academic, $p = 0.008$; financial, $p < 0.001$; personal, $p = 0.03$). There was no significant difference in academic stress reported by UK students across year levels. No significant difference was found between the two countries' BSc scores in relation to academic, financial, or personal stress, respectively.

Significantly higher levels of personal stress were reported by students in the MPhysio than in first-year students in WA BSc ($p = 0.04$). MPhysio students reported significantly higher levels of financial stress than second- ($p = 0.01$), third- ($p = 0.01$), and fourth- ($p = 0.002$) year WA BSc students.

Differences between student subgroups

Female students from BSc programs in WA and the UK reported statistically higher levels of academic stress than males ($p = 0.004$). There was no difference in academic stress between males and females in the MPhysio program or in any other subscale (financial or personal).

The same stressors were identified for all students regardless of 1) their country of origin ($p = 0.52$); 2) whether they were from the city in WA or rural areas in Australia and other cities of Australia ($p = 0.15$); and 3) whether English was their first language ($p = 0.35$).

Table 2. Perceived degree of course difficulty in each year of the Western Australia and the United Kingdom physiotherapy programs.

Year/program BSc	Much less difficult than expected		A bit less difficult than expected		About as difficult as expected		A bit more difficult than expected		A lot more difficult than expected	
	WA	UK	WA	UK	WA	UK	WA	UK	WA	UK
1	0	0	1.2	0	32.0	30.5	45.2	27.8	20.2	41.7
2	0	0	3.3	0	20.0	26.2	50.0	50.0	26.7	23.8
3	0	8.5	3.8	2.1	11.3	17.0	45.3	63.8	37.7	8.5
4	0		3.8		26.9		50.0		19.2	
MPhysio	0		12.5		41.7		20.8		2.9	
Total/country	0	2.5	3.7	0.6	25.4	25.5	45.2	44.1	25.7	27.3
Total	0.9		2.5		25.4		44.8		26.4	

Values are percentage of students.
WA = Western Australia; BSc = Bachelor of Science; MPhysio = Master of Physiotherapy (Graduate Entry).

Table 3. Mean (SD) hours per week of paid employment of physiotherapy students from Western Australia and the United Kingdom.

	Bachelor of science program year level								Master of physiotherapy
	1		2		3		4		
	WA	UK	WA	UK	WA	UK	WA		WA
Country									
Percent of respondents	75	11	75	17	80	21	75		79
Mean hours worked per week	14.4	7.8	10.4	5.6	10.1	7.7	13.2		15.2
SD	13.1	3.7	8.7	2.6	4.9	4.9	23.5		13.6

WA = Western Australia; UK = United Kingdom.

321

Table 4. Hours of paid work in physiotherapy students from Western Australia and the United Kingdom.

Paid employment each week (hours)	Students in paid employment (percentage)	
	WA	UK
0	24.2	84.5
1–5	17.3	5.0
6–10	31.0	8.1
11–15	23.0	2.5
16–20	6.0	0
21–25	2.4	0
26–30	0.8	0
More than 31	3.6	0

WA = Western Australia; UK = United Kingdom.

Items within the stress subscales

The eight most stressful items identified by all students are shown in Table 5. The major sources of stress related to items from the academic stress subscale (item ranked highest was the amount of material to be learned). The greatest differences between students from WA and the UK were in the items on accommodation and university fees within the financial subscale (indicated by the high variance score). Accommodation was rated as a very low source of stress for WA students from Perth (the local city) compared with students who were from the UK, Australian rural areas, or overseas. University fees were rated as a very low source of stress for students from the UK compared with students from any other place of origin. For students who were from overseas and for whom English was not their first language, loneliness was rated as a far greater source of stress than those for whom English was their first language.

Discussion

The primary aims of this study were to determine the sources of stress in physiotherapy students and to ascertain whether subgroups within the student population identified different stressors. A 70% response rate from the total student group (UK 72%, WA 69%) was considered to be excellent and the data obtained were representative of the student groups.

Academic stress is consistently reported as being the highest stressor for current physiotherapy students, as seen by the results of this study, and from USA studies as early as 1983 (Francis and Naftel, 1983; O'Meara, Kostas, Markland, and Previty, 1994). The items that comprise the academic stressors have not changed and continue to focus on the amount of course material students are required to learn and the impact this has on students' time. This finding is not surprising when reviewing physiotherapy curricula. There has been an exponential increase in knowledge in the profession of
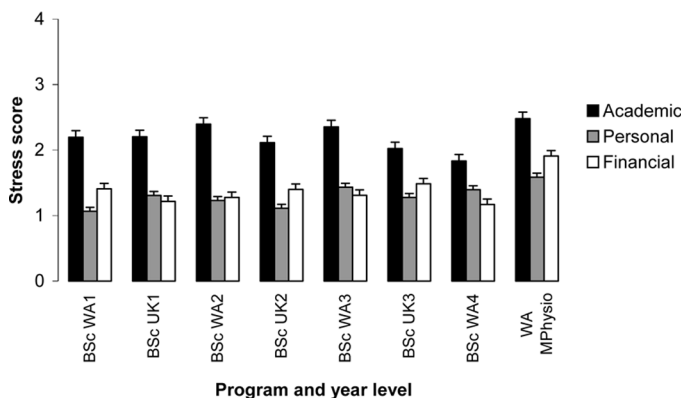
WA = Western Australia. UK = United Kingdom. BSc = Bachelor of Science.
MPhysio = Master of Physiotherapy. Number = year level of program.

Figure 1. Physiotherapy students' sources of stress in each year of the Western Australia and the United Kingdom programs

Table 5. Ranking of the items within the academic, personal, and financial subscales based on the mean score and maximum variation contributing item.

	Ranking	
Subscale	Rank (mean score)	Rank (% variance contribution)
Academic issues		
Amount of the material to be learnt in the course	1 (2.83)	6 (5.74)
Time demand of the course	2 (2.72)	5 (9.34)
Intellectual demand of the course	3 (2.27)	4 (9.96)
Overall level of stress	4 (2.13)	2 (13.36)
Uncertainty about the expectations in the course	5 (1.95)	3 (12.82)
Physical demand of the course	6 (1.22)	1 (48.76)
Personal issues		
Stressful events	1 (1.86)	5 (8.90)
Mood	2 (1.42)	6 (7.25)
Relationships with family members	3 (1.11)	4 (10.46)
Relationship with partner	3 (1.18)	3 (11.13)
Physical health	3 (1.27)	2 (12.96)
Psychological health	4 (1.08)	7 (4.26)
Loneliness	5 (0.94)	1 (45.02)
Financial issues		
Personal finances	1 (2.11)	4 (12.66)
Cost of books and equipments	2 (1.64)	5 (9.92)
Transport	3 (1.06)	2 (21.01)
University fees	4 (1.04)	1 (40.59)
Accommodations	5 (0.85)	3 (15.81)

Ranking of items using repeated measures ANOVA and Factor analysis with varimax rotation; Mean score (ranked where 1 = highest; 6 = lowest) and maximum variation contributing item (ranked where 1 = maximum variance; 6 = minimum variance).

physiotherapy and scope of physiotherapy practice, in health and health care management (Crosbie et al, 2002; Moseley, Herbert, Sherrington, and Maher, 2002). Students are required to meet the requirements of accreditation bodies and to embrace the values of higher education. For example, the achievement of discipline-specific knowledge and skills and generic attributes, such as critical thinking and problem solving, information technology, lifelong learning skills, internationalization, and cultural awareness, are important learning outcomes for university graduates to prepare them for the real-world demands of the workplace in a constantly changing global environment (Broberg et al, 2003; Crosbie et al, 2002; Gard and Sunden, 2003; Higgs, and Hunt, 1999; Higgs, Hunt, Higgs, and Neubauer, 1999; Markwell, 2002; Mason and Sparkes, 2002).

In Australia, students are required to attend around 20−25 hours per week in face-to-face contact (in lectures, tutorials, practical classes) for approximately 32 weeks each year and around 30 hours per week in clinical practicum for approximately 30 weeks of the physiotherapy program (Crosbie et al, 2002). At Curtin, weekly contact hours in year 1 are 16 hours and between 21 and 28 hours in years 2 and 3, and 32 hours in year 4 including clinical practicum hours. At Brighton, average weekly contact hours in years 1, 2, and 3 are 25 hours for 31, 25, and 13 weeks, respectively, and clinical hours consist of 30 hours per week for 3 weeks in year 1, 8 weeks in year 2, and 24 weeks in year 3.

The average weekly course contact hours in physiotherapy are high compared with those from other fields of study in Australia (Commerce/Business = 13 hours; Arts/Humanities/Social Science = 13.1 hours; Education = 12.5 hours; Science = 17.9 hours) and similar to Engineering (21.1 hours) and other fields in Health Sciences (McInnis and Hartley, 2002). Beck et al (1997) reported similar high levels of academic stress (related to amount to learn, lack of free time, long hours of study, examinations, and difficulty of work) in students in Nursing, Pharmacy, Medicine, and Social Work. Academic stress related to program intensity is also well recognized in dental schools (Humphris et al, 2002).

Despite the high contact hours and academic requirements in the course, more than 75% of WA physiotherapy students work an average of 12.7 hours each week. In 2001, average hours spent by the average Australian university student in part-time work were 14.7 hours per week, and latest data suggest a greater portion are seeking employment (Long and Hayden, 2001; McInnis, 2001; McInnis and Hartley, 2002). Around 44% of Australian university students work between 11 and 20 hours and students with contact hours of more than 21 hours work an average of 13.2 hours (Long and Hayden, 2001; McInnis, 2001; McInnis and Hartley, 2002). Students in the MPhysio program at Curtin work more hours per week (15.2) than the average Australian university student (14.7), despite the intensive requirements of the program. Recent research on Australian university students indicates that their engagement in high or low hours of paid employment does not differentially impact on average grades unless the student is very young and course contact hours are greater than 21 hours per week. The main determinants of high grades are academic commitment, study motivation, and time management (McInnis and Hartley, 2002). The MPhysio program comprises six sequential semesters over a 2.25-year period with no extended breaks between semesters. In the WA BSc program, students participate in paid work fewer hours per week in the second and third years of the program, the most intensive period of course work. In contrast, only 16.3% of UK physiotherapy students work in paid employment, averaging 7.0 hours per week. Despite these differences in commitment to work, students from the UK and WA report

the same levels of academic stress. Hence, the physiotherapy curriculum (amount of material to learn and time demands) is the greatest factor causing stress in physiotherapy students.

In contrast, the small number of UK physiotherapy students working part-time is not representative of the national UK data, which indicate that 46% of UK students work (Callender and Kemp, 2000). Factors that affect the number of hours UK students work relate to the distance of the university from the student's home location (Metcalf, 2001). Students from the UK rotate through placements across wide geographical areas that are not within commuting distance. This necessitates students to be resident while on placement, making it extremely difficult to have part-time jobs while studying. In Brighton, 33% of students live locally to the university, and trends indicate that a greater proportion of applicants are being drawn from the local population. Students from Brighton only tend to work in the holiday periods when casual employment opportunities are readily available. In contrast, many students in WA live in close proximity to the university in cheap accommodation or at home. In the United States, there are an increasing number of students living at home while attending higher education to rationalize the financial cost of education (McInnis, 2001). Although many Australian students work for extras, independence, and travel, around one in five students work to pay for their basic needs such as food and rent (McInnis, 2001; McInnis and Hartley, 2002). Students are less likely to engage in university life and culture and spend less time on campus (McInnis, 2001). This reduced commitment to study for many university students, known as student disengagement, is not entirely explained by financial pressure but rather by a decreased motivation to study or an imbalance between study and social demands. Physiotherapy students are required to commit long periods of time on campuses to practical and laboratory classes despite the flexible modes of learning offered currently by university curricula in general.

The finding that students in the BSc program at Curtin had significantly lower academic stress in their fourth year, which is primarily clinical, is surprising when compared with students in other health-related programs. Physiotherapy students spend 30 hours per week in clinical placements in the fourth year of the BSc Curtin program

and work in paid employment an average of 13 hours per week. Students are also required to complete academic studies alongside their clinical practicums, consisting of an average of 4 study hours each week. The clinical program in the UK is very different from that in WA. Students in the UK do not undertake clinical practicums until the second semester of year 2 when they have two placements. In year 3, these students commence with two clinical practicums followed by a 2-week period back at the university. Clinical practicums then continue until a final block period at the university when students complete their academic studies, final dissertation, and preparation for examinations.

Medical and nursing students report high levels of stress in the clinical portions of their program as a result of time demands, high levels of responsibility, feelings of inadequacy, and talking to patients (Beck et al, 1997; Elliott, 2002; Firth, 1986). The reduced stress reported by students in the fourth year of the WA BSc program may be related to the learning that occurs in the clinical practicum. Students are required to integrate their knowledge and skills rather than learn large volumes of new material. Their generic skills are well developed, and students have a positive outlook to their learning in clinical practicums. The clinical program is integrated into the UK BSc program at an earlier stage (year 2). Further investigation is required to determine which model of education is likely to produce less student stress and best prepare students for graduation.

Although there were no differences in sources of stress in first-year UK physiotherapy students compared with other years of the UK program, high levels of stress have been reported in UK medical students as they transit from school to higher education where teaching methods are less didactic and where students experience new freedoms and competition with people of similar or greater intellectual ability (Radcliffe and Lester, 2003).

Female undergraduate students universally report greater academic stress than males not only in physiotherapy (Campbell, Svenson, and Jarvis, 1992; Hojat et al, 1999). Campbell et al found that female students, particularly those who were mature aged, had more difficulty with reducing stress as a result of lack of time

management and self-discipline. Although not reported in the literature, additional stresses that mature aged female students may encounter include the impact of potentially caring for children, involvement in long-term relationships and responsibility for aging parents. Female students experience more anxiety, particularly with examinations (Hojat et al, 1999). Our observation of female student behavior is that they are more likely to strive for high levels of performance than males. El Ansari (2003) found that female students' academic grades were significantly better than males in physiotherapy.

International students encounter difficulty with their academic performance and anxiety when there is a significant language and cultural difference (Abramovitch, Schreier, and Koren, 2000). The selection process into physiotherapy courses that requires a high level of English may account for the lack of additional stress found in international students. Although international students for whom English was not their first language reported loneliness as a source of stress, they also had less family stress; hence, their overall personal stress was the same as students from other origins.

Educators often argue that professional clinical programs, such as medicine and physiotherapy, have high content knowledge within their curricula for students to be well prepared for clinical practice and to be sole practitioners upon graduation. Students recognize that stress is a powerful motivator to work hard (Radcliffe and Lester, 2003). Although some educators might agree that stress is a useful motivator for student learning, there is a large body of evidence that indicates stress results in psychological difficulties including depression and anxiety (MacLeod and Byrne, 1996; Pickard, 2000; Tully, 2004). In addition, learning is not facilitated by high levels of stress. For deep learning to occur, students require a high level of cognitive engagement with learning activities so that they can make meaning of the content, be able to appraise it critically, and be able to apply their knowledge (Dunn, Morgan, O'Reilly, and Parry, 2004). Students should be given time to reflect on their learning and be given opportunities to improve their learning (Dunn, Morgan, O'Reilly, and Parry, 2004; Huba and Freed, 2000). The high contact hours

in current curricula limit the opportunities for students to fully engage in deep learning and are more likely to encourage rote learning (superficial learning). Students studying medicine using problem-based learning with very low contact hours, report high academic stress with uncertainty about study behavior, progress and aptitude rating the highest (Moffat, McConnachie, Ross, and Morrison, 2004). Thus, the volume of content within physiotherapy curricula rather than course contact hours seems to be the predominant factor determining students' academic stress. Further studies are required to explore the differences in academic stress associated with traditional physiotherapy education programs and those using problem-based learning.

It is important to reevaluate the purpose of higher education in professional courses, such as physiotherapy, to imbue students with disciplinary expertise who have appropriate generic skills and who are able to think and learn. Curricula that develop generic attributes and students' higher cognitive abilities rather than being a package of content may achieve a reduction in student workload and hence stress. There may also be a role for physiotherapy programs in assisting students to manage stressors and develop a work-life balance, which better prepares them for the demands of professional life.

Limitations

The USOS questionnaire was administered to students during semester well prior to their examination period, and the results of this study may underrepresent the level of stress many students' attain and require further investigation.

Conclusion

The major sources of stress in undergraduate physiotherapy students in WA and the UK were related to academic issues, particularly the amount to learn, time demands of the course, and conflict with other activities. The majority of students perceived their physiotherapy course to be more difficult than they had expected.

Although WA physiotherapy students worked relatively moderate hours in paid employment each week compared with other university students and more than their UK counterparts, there was no correlation between any of the sources of stress subscales and number of hours worked. If there were a reduction in the amount of content in physiotherapy curricula, this could potentially reduce academic sources of stress. This finding requires reevaluation of the outcomes for physiotherapy education.

Acknowledgments

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Appendix. Undergraduate Sources of Stress (USOS) questionnaire.

	Not at all	A little	Some-what	Quite a bit	A great deal
To what extent has each of the following been a source of stress to you this semester? (Please circle 0, 1, 2, 3, or 4 as appropriate.)					
1. Personal finances	0	1	2	3	4
2. Accommodation	0	1	2	3	4
3. Transport	0	1	2	3	4
4. Cost of books/equipment	0	1	2	3	4
5. University fees	0	1	2	3	4
6. Relationships with family members	0	1	2	3	4
7. Relationship with partner	0	1	2	3	4
8. Loneliness	0	1	2	3	4
9. Physical health	0	1	2	3	4
10. Psychological health	0	1	2	3	4
11. Stressful events	0	1	2	3	4
12. Mood	0	1	2	3	4
13. Intellectual demands of the course	0	1	2	3	4
14. Physical demands of the course	0	1	2	3	4
15. Time demands of the course	0	1	2	3	4
16. Uncertainty about expectations in the course	0	1	2	3	4
17. Amount of material to be learnt in the course	0	1	2	3	4
18. Overall level of stress	0	1	2	3	4

Scoring of subscales: Financial issues (items 1–5); Personal issues (items 6–12); Academic issues (items 13–18).

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Outcomes and evaluations: Is there a relationship between indicators of student success and student evaluations of learning?

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Contemporary Australian higher education policy draws together a number of measures of quality relating to the student experience and the achievement of learning outcomes within a regulatory framework. New performance indicators are in the process of being developed and piloted, with results ultimately to be made public on the 'My University' website. This paper explores the connections between existing institutional measures of the student experience and the outcomes these students achieve at the level of the individual unit of study within the context of a large university in Western Australia. Fulltime students enrolled in seven core units in the first year of a Bachelor course were studied (n=2920). Student evaluation data (qualitative and quantitative), unit grades and course retention data were interrogated. A number of patterns were observed relating to student evaluations and student achievement which were in places contrary to previous findings. This observation has implications for the external publication of evaluation data and student outcomes. Suggestions for internal quality improvement approaches are identified and discussed.

Keywords: student evaluation of teaching and learning, student grades, student retention

Introduction

Higher education institutions have had an enduring interest in the quality of the student experience and the learning outcomes they achieve. In Australia, the student experience has been appraised using the long standing Course Experience Questionnaire (CEQ), a survey instrument administered to recent graduates. The CEQ is partnered with the Graduate Destination Survey (GDS), a survey instrument which collects information about the activities of graduates after they have completed their studies. Together, the CEQ and GDS are collectively known as the Australian Graduate Survey (AGS). It is important to note that both surveys report recent graduates' evaluation of a whole programme. Other institution-specific surveys are also used for quality improvement and assurance, with a range of approaches in use across the sector.

The landmark *Review of Australian Higher Education* (Bradley, Noonan, Nugent, & Scales, 2008) pointed to a number of concerns with the continued use of these indicators, asserting that "Australia has now fallen behind its major competitor countries on key teaching and

student experience indicators" and arguing that a "comprehensive approach to measuring and monitoring the level of student engagement and the total student experience" was needed, thereby drawing more closely together the student experience and the achievement of learning outcomes (Bradley et al., 2008, p.78). Federal Government subsequently accepted the majority of the Review's recommendations, establishing the *Transforming Australia's Higher Education System* policy position in May 2009. This landmark policy paper foreshadowed the formation of the Tertiary Education Quality Standards Agency (TEQSA) as a single unified regulator for the sector and proposed the introduction of a suite of new performance indicators.

On 29th January 2012, TEQSA commenced its regulatory duties. TEQSA itself is regulated by the Tertiary Education Quality and Standards Agency Act 2011, with six 'objects' (objectives) established to define an operational frame of reference. In addition to objects relating to the assurance of quality and the protection of Australia's reputation, a final object requires TEQSA to ensure the provision of information relating to higher education in Australia, to both current and future students. In part, this provision of information will be achieved through the publication of institutional information on the forthcoming My University website (DEEWR, 2011). Inevitably, institutions are sensitive to the publication of quality information, and particularly so when new performance indicators are to be deployed.

It is anticipated that the tools for measuring the student experience will include the new University Experience Survey (UES) and an updated version of the GDS (DEEWR, 2011). A draft version of the UES was piloted during 2011, with a number of recommendations arising from that trial phase (Radloff, Coates, James, & Krause, 2011). Firstly, Radloff et al. suggest that students in their first and final year of their bachelor program should be surveyed about their experience in three core areas: Learner Engagement, Teaching and Support, and Educational Development. They further suggest that sampling should be conducted so as to yield reports at the level of the discipline within an institution. Such evaluations, occurring at stages prior to graduation, therefore constitute a departure from the long standing post-programme view taken by the CEQ and GDS.

Alongside such measures of student experience, other measures (such as an Australian version of the Collegiate Learning Assessment) will aim to provide evidence of academic standards. Higher education institutions therefore face new challenges in the evidencing of quality of teaching and learning outcomes within a regulatory framework that focuses on the demonstrated achievement of academic standards and the measurement of the student experience.

Despite the external facing nature of the proposed indicator framework, institutions will presumably also wish to use such measures for internal quality improvement purposes. There has been a long standing (if somewhat inconclusive) interest in the connection between surveys of student experience and assessments of student achievement. The study reported here aims to make a contribution to that discussion, within the context of an emergent quality framework to be established for Australian higher education.

Literature review

Previous research has focused on the connections between graduate surveys and final outcomes (such as Trigwell & Prosser, 1991) however studies of this type do not, by definition, investigate the relationship between student evaluations and outcomes at the level of the **unit** of study (as opposed to the broader level of the whole programme). There is a significant positive correlation between academic achievement and students overall satisfaction with their courses,

as perceived by graduates using the Course Experience Questionnaire (Wilson, Lizzio, & Ramsden, 1997). However, the Course Experience Questionnaire survey measures a different construct than surveys used by students for evaluating student experiences of teaching and learning, the focus of this investigation (Hirschberg, Lye, Davies, & Johnston, 2011). Much of the research on evaluation instruments has focussed on students' grade expectations and their evaluations of teaching (Marsh, 2007). Results of studies on the correlation between grades and student evaluations of teaching differ, showing either no relationship or a positive relationship (Patrick, 2009). Mustafa and Chiang (2006) investigated the relationship between student evaluations of teachers and student grades. They established that students with a low grade point average (GPA) believe the teacher has a significant role in enhancing the content of the unit in contrast to students with a high GPA who perceive the unit content is more significant in enhancing the quality of education (Mustafa & Chiang, 2006). A model for evaluating student perceptions of their learning outcomes and satisfaction has been developed (Duque & Weeks, 2010) however, to date, there is little research on the relationship between student perceptions of their learning and objective measures of their learning outcomes such as grades or retention.

The research, mainly conducted on small student numbers, indicates there is a modest relationship between student grades and learning and a small relationship between student ratings of teaching effectiveness and learning (Arthur, Tubre´, Paul, & Edens, 2003; Spooren & Mortelmans, 2006; Stark-Wroblewski, Ahlering, & Brill, 2007). However, the student evaluation instrument used by Arthur et al. and Stark-Wroblewski et al. measures student perceptions of teacher attributes and behaviours rather than their perceptions of learning. In a much larger study of 16,484 students and 434 lecturers, no correlations were found between student grades and teacher evaluations (Davidovitch & Soen, 2009).

Indicators currently used by many universities for quality improvement include the results of internally developed student evaluation surveys and indicators of student success (such as retention rates and pass rates). At Curtin, such quality improvement tools focus on the improvement of the student's experience at the level of the course (i.e. the degree program). Annual course reviews provide a regular process for monitoring the quality of a course, partnered by a comprehensive course review that provides the opportunity for a complete review of the academic program, its structure, the student pathways, student profile, curriculum, quality of teaching and learning, assessments and graduate outcomes (Jones & Oliver, 2008; Oliver, Ferns, Whelan, & Lilly, 2010; Oliver, Jones, Ferns, & Tucker, 2007).

The course review process draws on a number of sources of data including pass rates, retention rates and student evaluations of their teaching and learning experiences. This information is gathered at the level of the individual unit of study within the course (Ferns, McMahon, & Yorke, 2009; Jones & Oliver, 2008). As the first year curriculum has a critical role to play in engaging students and in their subsequent success and retention (Kift, 2008), first year student retention and pass rates are interrogated along with grade profiles for all units. Analysis of this data provides the course academic team with a better understanding of student expectations.

In 2005, Curtin implemented a university-wide system called *e*VALUate for gathering and reporting students' perceptions of their learning experiences. *e*VALUate comprises a unit survey and a teaching survey. The unit survey contains eleven quantitative items and two qualitative items (see Appendix). Quantitative items ask students for their perceptions of what helped their achievement of unit learning outcomes (Items 1 to 7), their engagement and motivation (Items 8 to10) and overall satisfaction (Item 11) (Oliver, Tucker, Gupta, & Yeo, 2008). This unit survey differs radically from other student evaluation of teaching instruments which mainly

focus on what the teacher does: it reflects Curtin's commitment to student learning through an outcomes-focused approach whereby learning experiences (including face-to face teaching, online learning, fieldwork, studios, laboratories, clinics and so on) are designed to help students achieve the unit learning outcomes.

Research on the *e*VALUate data, aggregated at university wide level has shown that contrary to what some staff believe, students of lower semester weighted averages are less likely to give feedback in this survey. In contrast, students of higher semester weighted averages are more likely to give feedback and are more likely to agree with the survey items indicating they have a more favourable learning experience. It is likely that higher participation by more academically accomplished and motivated students is skewing results in a positive manner when reporting aggregated university data (Oliver, Tucker, & Pegden, 2007; Pegden & Tucker, 2010). This study provides further interrogation of this trend by analysing first year student perceptions of a course over one semester.

The main purpose of this study, therefore, was to determine whether there is a relationship between first year student evaluations of their units (using *e*VALUate) and student outcomes (their grade for that unit), after completing one semester of study. Factors that might influence non-success were also examined along with retention within the course. The aim of this study is to provide academics with greater understanding of student evaluation data in relation to the student experience and their academic outcomes, through the investigation of the following research questions:

What kinds of relationships are there between student evaluations and student grades?

1. What are the student's perceptions of their learning experiences in a unit where the pass rate is high, or where the pass rate is low?
2. How many students fail to be retained by the course? For those students who fail, what comments do they make about the quality of their experience?

Methods

Prior to the beginning of this research, ethics approval was granted by the Curtin Human Research Ethics Committee. Data was retrieved from two systems, the *e*VALUate database and the University student management system (Student One). This study examined the data gathered from the core first year units from one large course in semester 1 2011, where students enrol in four of the seven core units offered. *e*VALUate unit survey responses were analysed to determine: 1) overall percentage Agreement (percentage of responses with Agree or Strongly Agree) for each unit and 2) percentage Agreement disaggregated by student grade. Retention rates were analysed based on whether students passed or failed the units. Analyses were carried out at the unit level in accordance with the survey items which relate to the unit and the unique grade patterns found within each unit. Qualitative student comments were analysed using IBM® SPSS® Text Analytics for Surveys 4.0. This program creates categories of words and themes based on the number of times (hits) they appear in the dataset. Visual representations can be created (called a category web) which represent the relationship between categories. The categories appear on the outer of the circle with the number of hits in brackets. The lines between categories indicate association; the darker the line, the stronger the association between the categories. All data was de-identified for the purpose of this study.

Results

All fulltime students enrolled in the seven core units in one Bachelor course were included in the study (n=2920). Students enrol in four units in each semester of the Bachelor course, seven of which are core units and one unit is specific to a major. Fifty nine percent of enrolments in semester 1 were international students, 50.5% were male and 98% were internally enrolled in one of eight campuses located in four countries. Fifty five per cent of students were 20 years of age or younger and 39% were 21 to 25 years of age. Unit enrolments ranged from 900 – 1700 students.

For all seven units, the overall survey response rate was 39.1% (internal mode = 39.1%; external mode 38.4%). Student response rates for each subgroup of interest are shown in Table 1. *e*VALUate survey response rates were representative for each unit (range: 35 – 42%) with a 95% confidence that the actual percentage agreement is within 10% (±) of the observed percentage agreement for the total student group enrolled in the unit.

Table 1: Student response rates for all seven units

Student subgroup	Student response rate
International students	40.2%
Australian students	43.6%
Females	46.5%
Males	36.8%
Age 20 yrs & under	43.5%
Age 21-25 years	37.7%

Survey response rates for each grade category are shown in Table 2. Students with a fail grade had the lowest response rate.

Table 2: Survey response rates by grade category

Grade Category	Student response rate
Fail	20.7%
Pass	37.1%
Credit	42.6%
Distinction	51.3%
High Distinction	59.7%

Pass rates in the units varied from 68-91%. Table 3 shows the percentage of students who passed each unit. Overall, 19.7% of student enrolments resulted in a fail grade in one or more of the seven units. The student subgroups with the greatest percentage of fails were students enrolled in an external mode of study (35.4%), males (24.0%), students aged 21-25 years (26.2%) and students studying in two of the offshore campuses (23.5% and 24.7%).

Table 3: Student pass rates for all seven units

Unit:	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
Pass rate:	91.2%	68.5%	79.6%	76.1%	76.7%	73.4%	86.3%

Table 4 shows the percentage Agreement with each of the 11 quantitative *e*VALUate items in each of the seven core units. Percentage Agreement with Item 11 (Overall satisfaction) ranged from 73.6% to 93.9% and was highest in Units 2, 3 and 7. Items 8-10 (student motivation and engagement) were lowest in Units 1 and 5. In the items about what helped students achieve the learning outcomes, Unit 1 had the lowest percentage Agreement for all items except Item 5 (feedback) and in particular for Items 1-3 (clear learning outcomes, learning experiences and learning resources). Unit 4 had low percentage Agreement for Item 5 (feedback).

Table 4: Student feedback (eVALUate results) for all seven units

	Outcomes	Experiences	Resources	Assessment	Feedback	Workload	Teaching	Motivation	Best use	Think about	Satisfaction
Unit 1	78.2	76.5	75.7	84.2	82.0	80.0	77.9	75.7	77.9	72.9	73.6
Unit 2	92.5	89.1	92.2	90.9	78.9	90.1	89.5	88.7	87.3	88.4	90.0
Unit 3	94.2	91.8	93.7	91.1	90.1	89.3	90.9	87.9	86.8	83.7	90.3
Unit 4	94.5	84.3	88.7	80.4	68.3	87.3	82.4	83.6	83.1	81.4	84.8
Unit 5	88.3	81.7	83.5	86.6	83.3	82.3	78.5	73.9	76.1	70.5	81.2
Unit 6	88.0	83.3	87.1	84.1	80.0	86.0	80.9	82.9	84.9	78.0	83.0
Unit 7	96.3	93.7	92.1	91.6	82.2	90.3	92.7	90.0	87.9	81.6	93.9

Values are percentage Agreement for each eVALUate item

Results for *e*VALUate Item 11 (Overall Satisfaction) were further analysed by student grade for each unit. Perhaps unsurprisingly, students who achieved a fail grade registered lower overall satisfaction than students who passed in all seven units. However, three distinct patterns were found. The first pattern (shown in Figure 1) where student overall satisfaction declined as grades increased, was found in Unit 1 only. The second pattern (Figure 2) where student overall satisfaction was relatively stable across the different student grades was found in Units 2 and 6. The third pattern (Figure 3) where student overall satisfaction increased as grade increased was found in Units 3, 4 and 5.
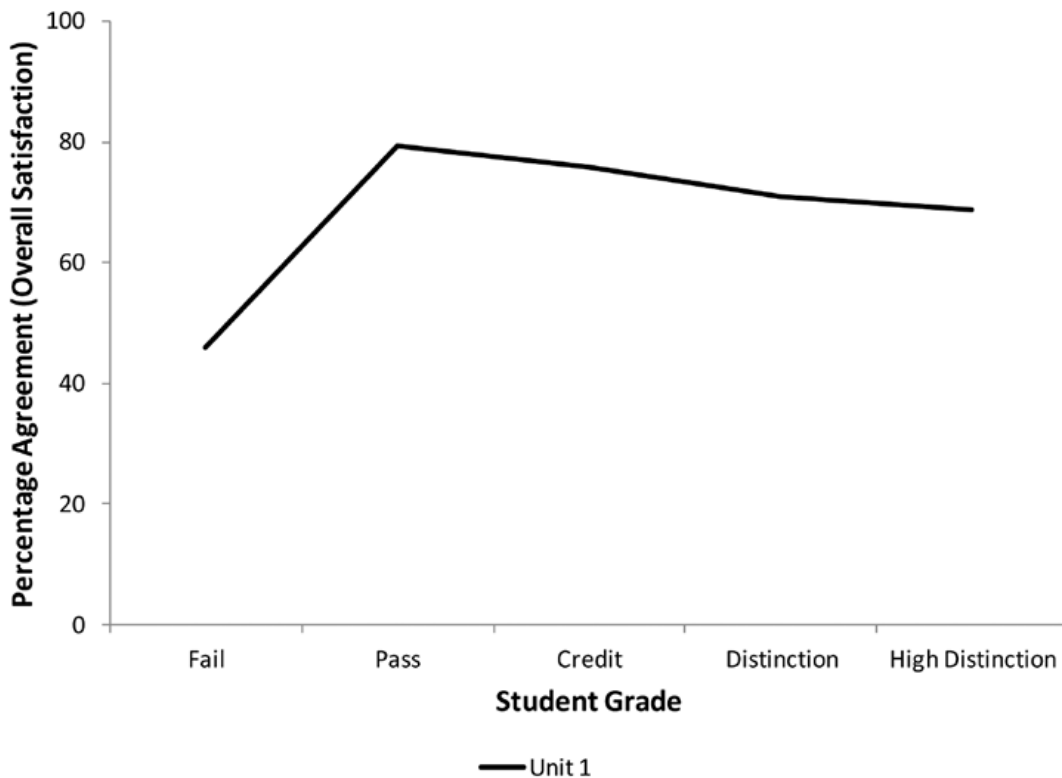
Figure 1: Student percentage agreement with Item 11 (Overall Satisfaction) by student grade for Unit 1
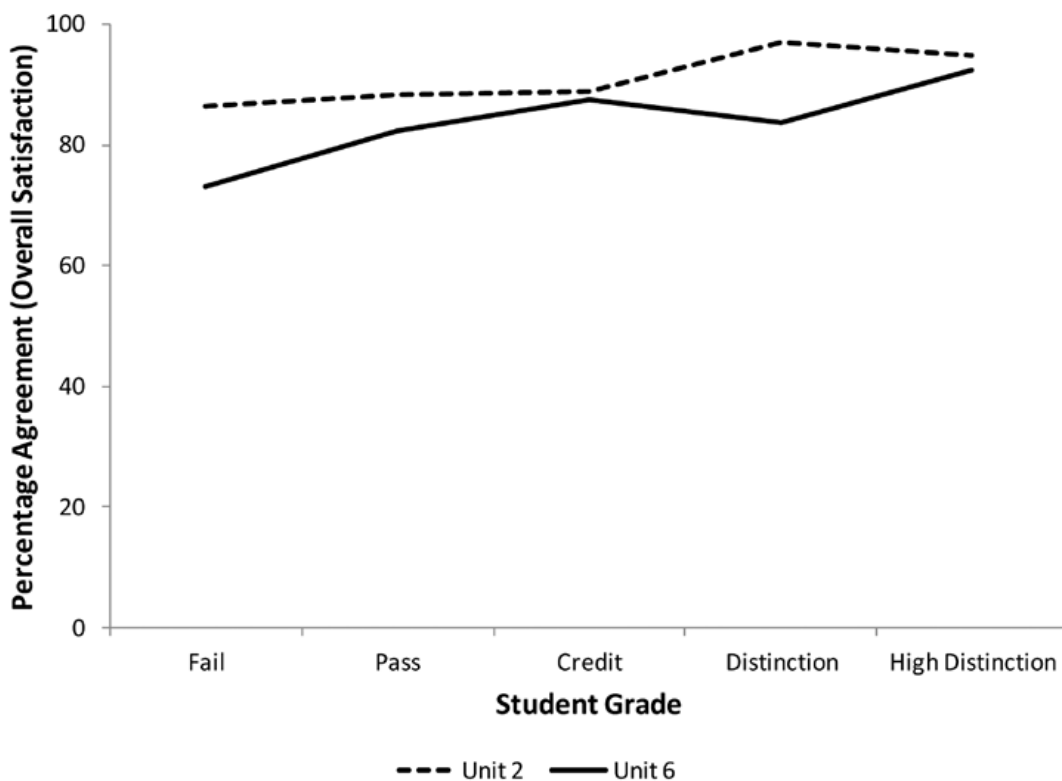

Figure 2: Student percentage agreement with Item 11 (Overall Satisfaction) by student grade for Units 2 and 6
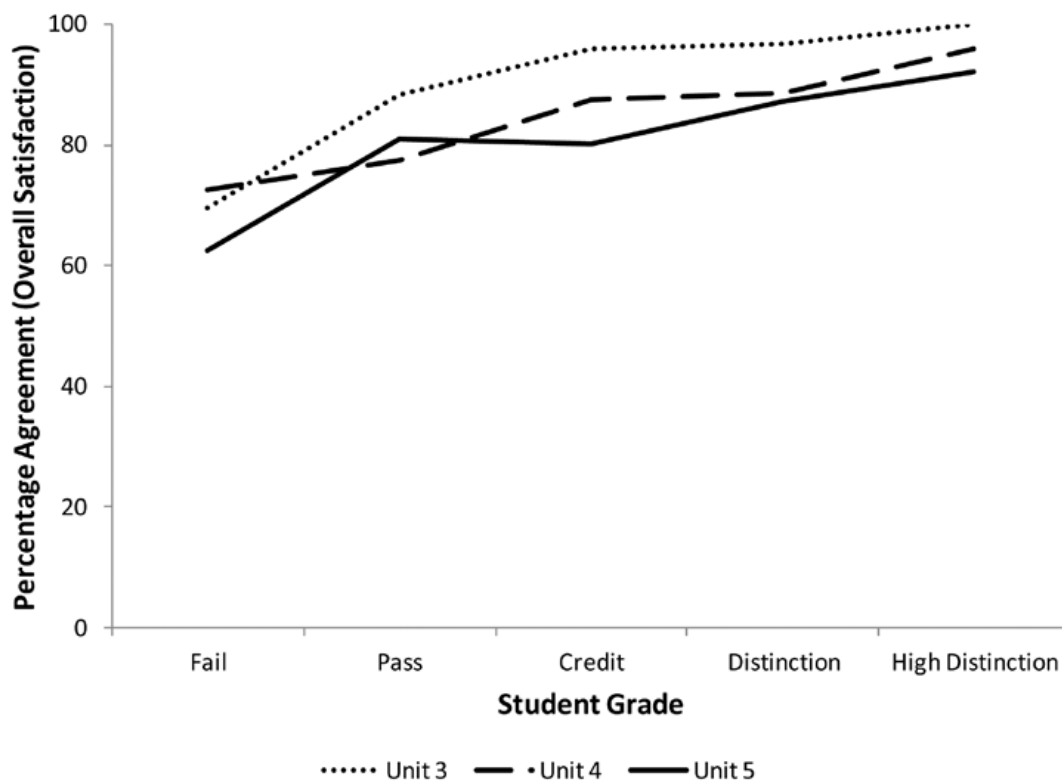
Figure 3: Student percentage agreement with Item 11 (Overall Satisfaction) by student grade for Units 3, 4 and 5

An analysis was conducted to determine whether students who passed and students who failed were still enrolled in the course one year later (course retention). Figure 4 shows the course retention from all seven units for both students who failed and students who passed. Course retention for students who passed was fairly consistent across the different units and ranged from 69.7% to 83.1%. Course retention for students who failed was lowest in the units with the highest pass rates (Units 1=25.2% and 7=35%). Course retention for students who failed was highest in the unit with the lowest pass rate, that is, Unit 2 (54.4%).
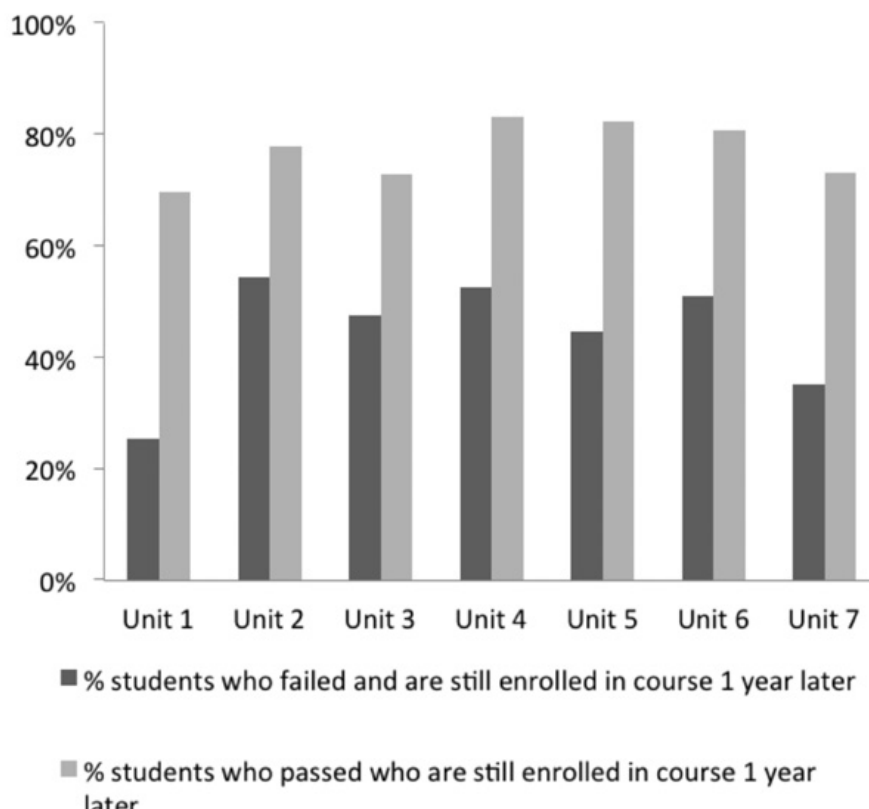
Figure 4: Percentage of students who failed and passed still enrolled in course 1 year later

Visualisations for student comments relating to the *e*VALUate Item 13 'How do you think this unit might be improved?' for Unit 1 (n=370; 52.6% of respondents made a comment) and Unit 2 (n=206; 54.9% of respondents made a comment) are shown in Figures 5 and 6.
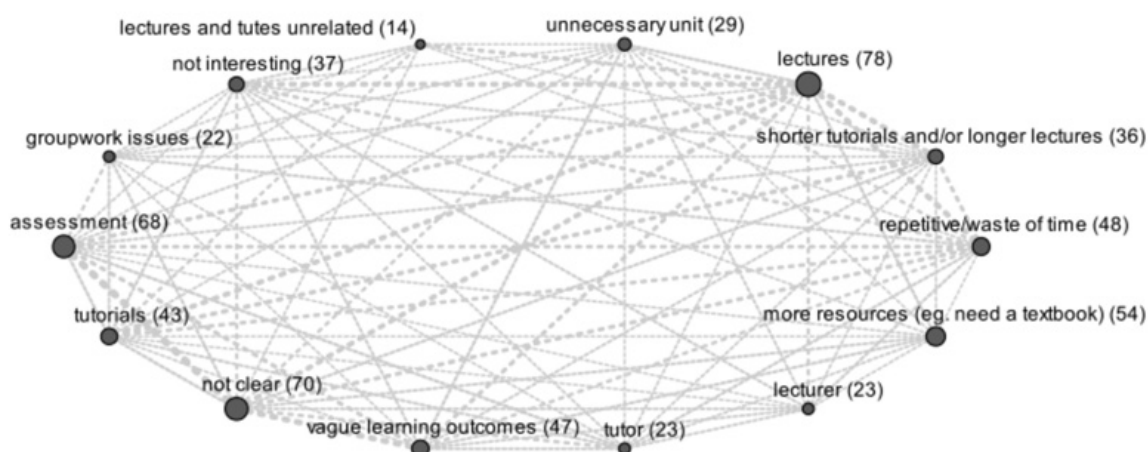
Figure 5: SPSS visualisation of student comments from Unit 1 for Item 13 'How do you think the unit can be improved'

For Unit 1, students reported that assessment and learning outcomes were unclear. Many students felt that the unit was unnecessary and/or aspects of it were a waste of time or were repetitive. Some students found the unit uninteresting and some wanted shorter tutorials and longer lectures.
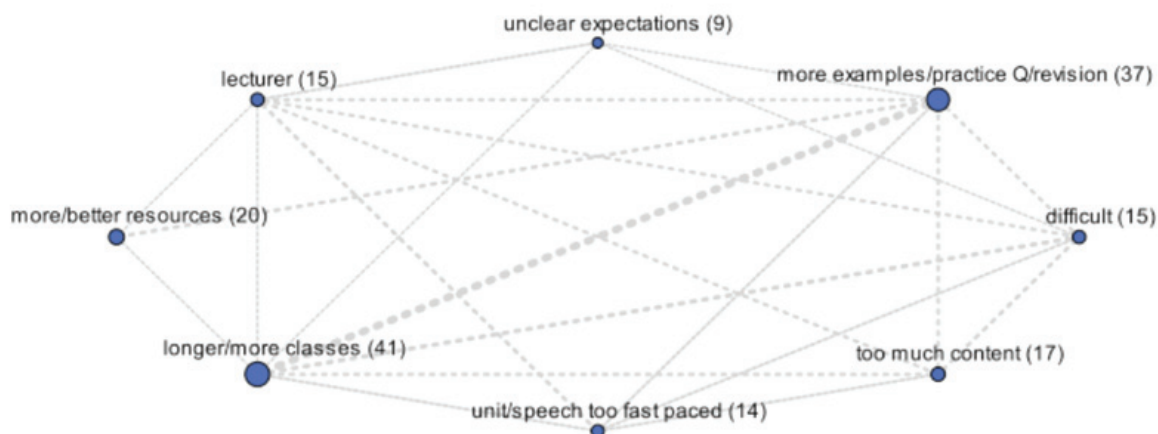
Figure 6: SPSS visualisation of student comments from Unit 2 for Item 13 'How do you think the unit can be improved'

For Unit 2, students reported that they wanted more class time and more examples, practice questions and revision. Many students wanted more or better resources. Some students found the unit or the instruction too fast paced and some students found the unit difficult or felt that it had too much content.

The visualisation for student comments by those with a fail grade in any of the seven units (n= 153; 48.1% of respondents made a comment) relating to the eVALUate Item 13 'How do you think this unit might be improved?' is shown in Figure 7.
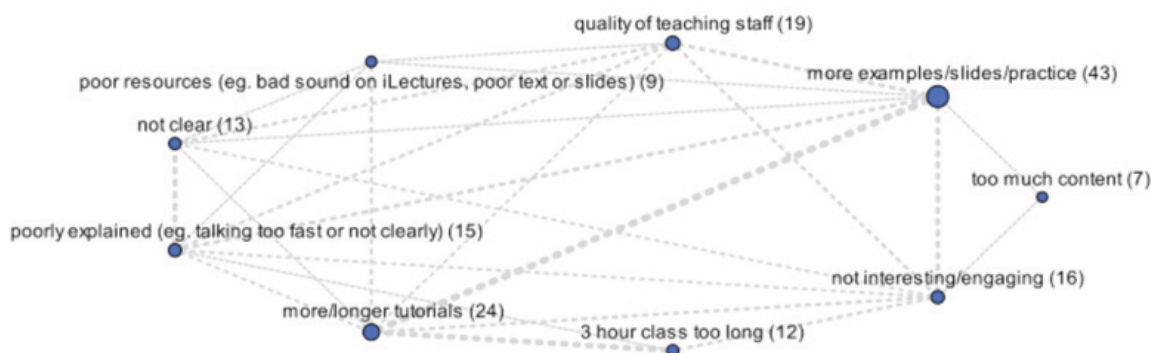
Figure 7: Text analysis of Needs Improvement comments for 7 units made where the result was a fail

Students who failed wanted more and/or better resources, as well as more examples and tutorials. Students who failed also reported that explanations were not always clear.

Discussion

We acknowledge the methodological limitations of this approach given that these indicator measures were derived from different units (which were taught by different teachers, using different resources and drawing on different assessments). Despite this limitation, an expectation that in general, students would be more satisfied as their grades increased was not always borne

out in the results reported above. In these cases, and somewhat contrary to staff beliefs, student perceptions do not always relate to their grade. This study of seven units found that in four units, students with higher grades reported increasing overall satisfaction. However, in 2 units, students reported the same overall satisfaction with their experience across the whole spectrum of grades (fail, pass, credit, distinction, high distinction). Running contrary to expectations, it was interesting to note that students in one unit who gained a bare 'Pass' reported higher satisfaction than those who attained a higher grade.

For this Bachelor course, higher pass rates were associated with lower retention rates. This may be explained by examining the unit learning outcomes and related assessment tasks. All units had 3-4 assessment tasks throughout the semester. With the exception of Units 1 and 7, all units had a final written examination worth 50% of the unit mark. The final written examination for Unit 1 was 40% and 35% for Unit 7. Unit 1 provides students with the key aspects of research and academic writing, written and oral communication skills in the context of the discipline, and beginning practices of teamwork. For some students, this unit provides 'gate-keeping' assessment tasks considered to be essential for student success in higher education. Unit 7 is an introductory unit to a discipline area and students are required to demonstrate application of discipline knowledge and analytical skills. These concepts and skills are considered to be essential for progression within the course.

On the other hand, the units with higher pass rates are not always the units with the greatest percentage of high achievement (distinctions and high distinctions). For example Unit 4 has one of the lower pass rates in our sample but it has the greatest percentage of students achieving distinctions and high distinctions.

Student motivation and engagement is generally in keeping with measures of overall satisfaction. The four units with the highest overall satisfaction are also the four units with the highest student motivation and engagement. Student motivation and engagement is not necessarily highest in units with the lowest pass rate. For example, in Unit 1 which had the highest pass rate, students had the second lowest motivation and engagement levels. In Unit 2 with the lowest pass rate, they had the second highest motivation and engagement level in this unit.

Qualitative analysis provided further information about differences in students' experiences and provided insight into possible reasons for the differing patterns of student feedback relative to student grade and pass rates. Some students enrolled in Unit 1 (the unit with the lowest number of fail grades) indicated that the student learning outcomes were unclear and that they needed more resources. For other students, the unit was too easy and repeated prior learning. Some students enrolled in Unit 2 (the unit with the highest number of fail grades) indict that some students found the unit challenging. An analysis of all students who failed in the course revealed the need for specific requirements for this subgroup (such as improvements in technologies, learning resources and a change to the tuition pattern) and professional development for staff teaching in these units.

Concluding remarks

Student perceptions about their experiences in teaching and learning surveys provide useful information to universities; however, the views of those students who do not respond are unknown and need further investigation (Guthrie & Johnson, 1997; Thorpe, 2002). In particular, the students who attain a fail grade are the most underrepresented group submitting surveys, a limitation of this study. Universities need to continue to work hard to increase response rates for

surveys and in particular, target non-responders in the students who fail.

Given the patterns reported here, we argue that closer attention is warranted to the connection between student satisfaction and student outcomes. Students may pass a particular unit of study. However, if this is accompanied with a sense of dissatisfaction and questions about academic standards, this position represents an undesirable outcome on the part of the institution. The introduction of published indicators such as the UES as a measure of satisfaction in the first year will act to sharpen the focus on this critical part of the student experience.

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Appendix

The eVALUate Unit Survey

Quantitative items with the following rating scale (Strongly agree, Agree, Disagree, Strongly disagree and Unable to judge). *Explanatory text in italics appears online by default.*

1. The learning outcomes in this unit are clearly identified.
   The learning outcomes are what you are expected to know, understand or be able to do in order to be successful in this unit.
2. The learning experiences in this unit help me to achieve the learning outcomes.
   The learning experiences could include: face-to-face lectures, tutorials, laboratories, clinical practicums, fieldwork, directed learning tasks, and online and distance education experiences.
3. The learning resources in this unit help me to achieve the learning outcomes.
   Learning resources could include print, multimedia and online study materials, and equipment available in lectures, laboratories, clinics or studios.
4. The assessment tasks in this unit evaluate my achievement of the learning outcomes.
   Assessment tasks are those which are rewarded by marks, grades or feedback. Assessment tasks directly assess your achievement of the learning outcomes.
5. Feedback on my work in this unit helps me to achieve the learning outcomes.
   Feedback includes written or verbal comments on your work.
6. The workload in this unit is appropriate to the achievement of the learning outcomes.
   Workload includes class attendance, reading, researching, group activities and assessment tasks.
7. The quality of teaching in this unit helps me to achieve the learning outcomes.
   Quality teaching occurs when knowledgeable and enthusiastic teaching staff interact positively with students in well-organised teaching and learning experiences.
8. I am motivated to achieve the learning outcomes in this unit.
   Being motivated means having the desire or drive to learn, to complete tasks and to willingly strive for goals.
9. I make best use of the learning experiences in this unit.
   I prepare for and follow up on the learning experiences offered in this unit.
10. I think about how I can learn more effectively in this unit.
    I take time to think about how I can learn more effectively.

11. Overall, I am satisfied with this unit.
    Overall, this unit provides a quality learning experience.

Qualitative items

1. What are the most helpful aspects of this unit?
2. How do you think this unit might be improved?

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Student perceptions of the teaching in online learning: an Australian university case study

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Universities have been collecting student feedback on their experiences in teaching and learning for decades. Their voice is usually captured in surveys with quantitative and qualitative data used for quality improvement. Quantitative data are often used to monitor the student experience and used as a key performance measure. As online learning is increasingly taken up in universities there is heightened interest about the student experience. In Australia, Open Universities Australia is the largest national provider of online learning. This paper analyses student perceptions of what is helping and hindering their learning, with a focus on teaching, from one large shareholder university. The eVALUate unit survey was used to collect student feedback from 47696 enrolling students in 490 units delivered over seven OUA study periods during 2012. The overall response rate for the unit survey was 24.1%. Students overwhelmingly reported very high levels of satisfaction with their experience. In selected units there were lower levels of satisfaction for quality of teaching and feedback on learning. Students commented that the online interactions with the teacher were most important to their learning and where feedback on their learning and assessments was not provided, this hindering their learning. Hence giving students feedback is an important role of the teacher in helping them learn online.

Keywords: student evaluation of teaching and learning, student perceptions; online learning, eLearning

Introduction

Online learning is increasingly becoming a core activity in higher education and there is heightened interest across the sector with the recent implementation of massive and small open online courses in higher education (MOOCs and SOOCs) (Bates, 2013). These initiatives build on paradigms for open access to tertiary education already in existence including the Open University (UK) and Open Universities Australia. In addition, many higher education providers currently incorporate a mix of online learning including units wholly or partially delivered online. Consequently a significant portion of students now experience learning in an online environment.

Over the past decade there has been a proliferation of e-learning products and online learning technologies and several theoretical frameworks for key components of e-learning have been proposed (Gilbert, Morton, & Rowley, 2007). Within these frameworks one focus has been on the way teachers incorporate new technologies into their teaching (Keller & Cernerud, 2002; Muilenburg & Berge, 2005). Frameworks informing e-pedagogy address design concepts such as the delivery of or presentation of content, the types of learning activities and the challenge of assessment. Some specifically consider the interactions between students and teachers and the social dimensions of online learning (see Gilbert et al., 2007 for a brief overview of the research literature). However, there remains a limited understanding of quality standards for e-learning resources and interactions.

Some frameworks perceive e-learning simply as a platform used to present or deliver learning content (generally via a learning management system) whilst others consider e-learning as providing new or enhanced opportunities for student engagement, interaction and learning (Ituma, 2011). Paetcher (2010) proposes a framework with five items for designing an e-learning course including: 1) course design, learning materials and electronic course environment; 2) interactions between students and teachers: 3) interaction with student peers; 4) individual learning processes; and 5) course outcomes. The quality of the teacher's interactions with students as part of their learning process is thought to be an important determinant for an effective online learning experience (see Ozkam and Koseler 2009 for a summary of the research literature). Teacher characteristics identified as essential to the creation of a positive online learning experience include their communication skills (responsiveness, informativeness, and fairness), their ability to broker and encourage interaction between students, their command of the technologies being utilised, general unit management skills, and a positive attitude towards teaching online (Ozkan & Koseler, 2009).

In an online environment interactions between students and teachers can occur synchronously or asynchronously, either way, the feedback from students and the perceived success of online learning frequently depends on the positive nature of these interactions (Picciano, 2002). Linked with theses interactions is the perceived benefit of improved student learning (Davies & Graff, 2005). However, the amount of student participation and interaction online is not necessarily related to increased learning or student performance as measured by their grades (Davies & Graff, 2005). There is some evidence linking student learning to their sense of connectedness to teaching staff and other students (Webb , Jones, Barker, & van Schaik, 2004). The concept of *presence* describes the notion that the amount and types of interactions experienced by the student in the online learning environment produces a sense of connectedness where the student identifies as being a part of a *community of learners* and that the student develops a sense of belonging to a social unit with others enrolled in the subject (Picciano, 2002). On the flip side some students have reported experiencing feelings of isolation, frustration, anxiety and confusion when participating in online learning (Smart & Cappel, 2006). Both students and teachers report that their satisfaction with online subjects depends on the quality and quantity of interactions (Picciano, 2002). It appears, however, that there is little research detailing the factors related to teaching and the teacher that hinders or helps student learning.

Since the 1950's student feedback has been collected using student surveys with the aim of monitoring student perceptions and quality improvement and to evaluate teaching and

learning in higher education (Marsh & Roche, 1992; Sorensen & Reiner, 2003).
Much of the research on student evaluations has focused on student evaluations of teaching effectiveness, dimensions of teaching effectiveness, issues of reliability, validity, student and teacher bias and usefulness of feedback instruments. The following recent reviews provide a critical review of the literature (Alderman, Towers & Bannah, 2012; Benton & Cashin, 2012; Hirschberg, Lye, Davies & Johnston, 2011; Perry & Smart, 2007; Richardson, 2005; Spooren, 2012).

Previous research has reported both positive and negative student perceptions of their experiences in higher education (Dobbs, Waid, & del Carmen, 2009) but the overall picture indicates that their experiences are positive. Students have reported their online experience as being more academically challenging, as providing a better learning opportunity and more opportunity for peer interactions (Dobbs, et al., 2009; Leonard & Guha, 2001; Wyatt, 2005). The role of the teacher in supporting learning through their interactions has been reported as strongly contributing to learning achievements and course satisfaction (Paechter, Maier, & Macher, 2010). Unfortunately there is a lack of research specifically investigating the impact of student evaluations of quality in teaching and learning in the online environment and research that explores systems to improve the student learning experience in the online space (Gilbert, et al., 2007).

A case study of an Australian university provider of online learning
Open Universities Australia (OUA) is the largest national provider of online learning created by linking 20 tertiary education providers from across Australia offering over 180 courses. OUA is owned by seven Australian Universities and governance is provided by a Chief Executive Officer and Board of Directors. Curtin is a large shareholder provider for OUA and is Western Australia's largest University with over 47,000 students.

OUA invites students to give feedback on their experience via a survey available for completion during two weeks at the end of the study period. The survey includes 23 items, 18 of which are statements with responses designed around a 4 point categorical scale, with no neutral option (forced choice). Four qualitative items are also included in the survey. Students are asked to rate their agreement with each item using Strongly Disagree, Disagree, Agree, Strongly Agree or Not Applicable. Response rates for the OUA study periods from Curtin are typically between 10 to 20%.

In addition to the OUA student evaluation system, Curtin students use the university-wide online student evaluation system (called eVALUate), developed at the University in 2005, which gathers and reports students' perceptions of their learning experiences. eVALUate is a system comprised of a unit survey which is automatically available to students enrolled in the unit, and a teaching survey which is available to students in the unit if requested by the teacher. The unit survey contains eleven quantitative items and two qualitative items (see Appendix). Quantitative items ask students for their perceptions of what helped their achievement of unit learning outcomes (Items 1 to 7), their engagement and motivation (Items 8 to10) and overall satisfaction (Item 11) (Oliver, Tucker, Gupta, & Yeo, 2008). Two qualitative items ask about the most helpful aspects of this unit and how the unit might be improved.

This unit survey differs radically from other student evaluation of teaching instruments which

mainly focus on what the teacher does rather than evaluating factors that influence the learning context. The eVALUate survey incorporates questions on student motivation and factors that helped or hindered their achievement of the unit learning outcomes, the approach reflects Curtin's commitment to student learning through an outcomes-focused approach whereby learning experiences (including face-to face teaching, online learning, fieldwork, studios, laboratories, clinics and so on) are designed to help students achieve the unit learning outcomes. The development and validation of the unit and teaching surveys are described in detail in Oliver et al. (2008) and Tucker, Oliver and Gupta (2012). The development and validation of these surveys for students learning online was confirmed (Oliver et al., 2008; Tucker, Oliver & Gupta, 2012). Quality improvement and assurance processes are imbedded at Curtin through the reporting and monitoring of eVALUate data (including the analysis of qualitative feedback) for multiple stakeholders, and review processes to improve the student experience (B Tucker, 2013).

Previous research has shown that at Curtin, response rates from units delivered partially online or fully online are higher than for those units and courses where students are enrolled and attend the majority of their classes at the main campus (Tucker, 2013). Student feedback, particularly overall satisfaction with their learning, is as positive in the online environment irrespective of enrolment mode. However, students consistently report lower satisfaction with the quality of teaching in units delivered fully online. This paper reports selected parts of research currently underway into the factors that enhance the learning experience for students studying fully online.

The main purpose of this study, therefore, was to determine students perceptions of their learning experience (using eVALUate) in relation to teaching when enrolled in units delivered fully online. This study is part of a larger investigation where other factors relating to student satisfaction, assessment and feedback are examined and the results of these factors will be reported elsewhere. The aim of this study is to provide teachers with a greater understanding of student perceptions of their learning experience and to provide recommendations for improved teaching and learning online, through the investigation of the following research questions:

1. What are the student's perceptions of their learning experiences in units delivered fully online?
2. What teacher attributes do students perceive that help them learn?
3. What teacher attributes do students perceive that hinder their learning?

Methods

Prior to the beginning of this research, ethics approval was granted by the Curtin Human Research Ethics Committee. Data was retrieved from, the eVALUate database and the University student management system (Student One). This study examined the data gathered from students who provided feedback using eVALUate and who were enrolled in any unit delivered by Curtin for OUA during 2012 during the evaluation period. Each study period, the eVALUate unit survey is typically open for three weeks at the end of the study period. The eVALUate surveys are administered online through OASIS (Online Access to Student Information Services), the student web portal. Students are notified by an Official Communications Channel message, and each week of the evaluation event non-responders

are sent additional messages to their email accounts encouraging them to provide feedback. In all communications, students are encouraged to reflect on their teaching and learning experiences including reflecting on their contribution to learning.

Data Analysis

In 2012, there were seven OUA study periods. eVALUate unit survey responses from units delivered in these study periods were analysed to determine overall Percentage Agreement (percentage of responses with Agree or Strongly Agree) for each unit, this data was then aggregated across all seven study periods.

Content analysis of the student comments from all seven study periods was performed using CEQuery and IBM® SPSS® Text Analytics for Surveys 4.0 (Oliver, Tucker, & Pegden, 2006, 2007; Scott, 2005). CEQuery automatically classifies comments into five main domains (Outcomes, Staff, Unit Design, Assessment, and Support) and 26 subdomains using a custom-tailored dictionary (as shown in Table 1).

Table 1: The domains and subdomains within CEQuery

Outcomes	Staff	Unit design	Assessment	Support
Intellectual	Accessibility & responsiveness	Practical-theory links	Relevance	Library
Work application /career	Teaching skills	Relevance (to work/life/discipline)	Marking	Learning resources
Further learning	Practical experience (current)	Flexibility/responsiveness	Expectations	Infrastructure/environment
Personal		Methods of learning & teaching	Feedback/return	Student administration
Interpersonal	Quality & attitude		Standards	Student services
Knowledge/skills		Structure & expectations		Social affinity/support

The SPSS Text Analytics for Surveys programme creates categories of words and themes based on the number of times (hits) they appear in the dataset. Visual representations can be created (called a category web) which represent the relationship between categories. The categories appear on the outer edge of the circle with the number of hits in brackets. The lines between categories indicate association; the darker the line, the stronger the association between the categories. All data was de-identified for the purpose of this study.

Results

In 2012, eVALUate was available for 244 unique OUA units delivered over seven OUA study periods; the overall number of units surveys was 490. All students enrolled in one of these units at the time of the evaluation period were invited to give feedback on their learning (n=47,697 unit enrolments). Unit enrolments ranged from 9 – 1700 students. More females were enrolled in the OUA units than males (females: n=14,184; males: n= 3,790). In the seven 2012 study periods, there were 11,501 surveys submitted. This is an overall response rate of 24.1% of the eligible students. A higher percentage of females than males participated in giving feedback using eVALUate (31.5% versus 20.3%). Table 2 shows the demographics and response rates by age group.

Table 2: Response rates by age group

	20 years and under	21-25 years	26-35 years	36-45 years	46+ years
No. of students	1248	4488	6995	3714	1709
No. of respondents	184	859	2048	1420	767
Response rate (%)	**14.7**	**19.1**	**29.3**	**38.2**	**44.9**

The quantitative results for each eVALUate item is shown in Table 3. The qualitative analysis of student comments is shown in Table 4 (using CEQuery) and displayed in Figures 1 and 2 (using SPSS Text Analytics Analysis).

Table 3 shows the aggregated results for the eVALUate unit survey for each study period included in 2012; highlighted cells indicate where Percentage Agreement was less than the University's target of 80%. In relation to the first research question about students' perceptions of their learning experiences the overall satisfaction (Item 11) was 82.9% when considering all study periods. Several items had values in excess of 85% and three in excess of 90% including one item from the group 'what helps achievement of the learning outcomes' and two items form the group 'student motivation and engagement'. In contrast the two items below the target of 80% were from the group 'what helps achievement of the learning outcomes', these two items relate to teaching and feedback.

Table 4 shows the results of the CEQuery analysis: the number and percentage and ranking of hits in each sub-domain and the ratio of best aspects/needs improvement and needs improvement/best aspects for the top 10 ranked sub-domains. Results highlighted as bold indicate those themes that students most frequently commented on and that are most important to their learning (that is the sub-domains with the highest ratio of either best aspects/needs improvement or needs improvement/best aspects). The data indicates that students perceived the unit outcomes to be highly intellectually stimulating/challenging (BA/NI odds = 9.0) and that staff quality and accessibility were some of the best aspects of their unit experience (BA/NI odds 2.2). The themes emerging from the needs improvement comments relate to unit design/structure (NI/BA odds = 2.7) and to assessment expectations and assessment standards (NI/BA odds 3.3 and 3.1 respectively). The second and third research questions are addressed by considering the student comments on teaching for Items 12 and 13, and the category webs produced from the analysis of these comments.

The visualisation for student comments relating the eVALUate Item 12 'What are the most helpful aspects of this unit' and subdomains relating to teaching (staff: accessibility, quality and teaching skills) is shown in Figure 1. The three dominant themes that emerged were 1) teacher and teaching characteristics (helpful, constructive, informative motivating,

approachable and so on); 2) that the teacher was easy to understand and responded to their questions in a timely manner; and 3) that they felt supported by their teacher.

The visualisation for student comments relating the eVALUate Item 13 'How do you think this unit might be improved?' and subdomains relating to teaching (staff: accessibility, quality and teaching skills) is shown in Figure 2. The themes that emerged were 1) the teacher was not clear or was confusing in their communications; 2) that feedback on their learning and on assessments was untimely, unclear and confusing. These findings are supported by the low Percentage Agreement (less than 80% Agreement) on the quantitative items on the survey (Item 5 and 7).

Table 3: Quantitative results by study period

Study Period	Number of Enrolments	Number of Responses	Response Rate	What helps achievement of the learning outcomes								Student motivation and engagement			Sat
				1	2	3	4	5	6	7		8	9	10	11
				Outcomes	Experiences	Resources	Assessment	Feedback	Workload	Teaching		Motivation	Best use	Think about	Satisfaction
1	12820	4016	31.3%	96.5	87.8	84.9	89.5	83.7	90.1	80.7		88.4	84.8	90.7	89.3
2	11131	2093	18.8%	91.1	84.2	85.1	82.4	77.5	81.7	76.6		88.3	89.3	90.8	80.0
3	13721	3084	22.5%	92.6	87.0	87.1	85.5	79.1	87.0	79.9		90.4	91.6	91.7	84.8
4	9256	1979	21.4%	92.3	86.1	87.6	84.7	80.1	85.5	80.3		89.8	90.9	92.2	83.8
5	367	172	46.9%	91.4	84.6	85.7	83.0	75.7	86.0	77.2		87.9	89.8	90.6	82.3
6	350	137	39.1%	97.1	82.4	82.4	84.3	76.6	87.4	79.4		86.9	88.3	90.5	79.1
7	52	20	38.5%	90.0	80.0	65.0	75.0	70.0	85.0	70.0		85.0	95.0	90.0	85.0
All study periods	**47697**	**11501**	**24.1%**	**92.0**	**85.4**	**86.2**	**83.9**	**77.8**	**85.5**	**78.4**		**88.9**	**90.3**	**91.2**	**82.9**

Sat = satisfaction

Table 4: The number, odds and rank of comments in each sub-domain

| **Best Aspects**				**Needs Improvement**			
Rank	**Sub-domain**	**Total hits**	**BA/NI odds**	**Rank**	**Sub-domain**	**Total hits**	**NI/BA odds**
1	staff::accessibility	2227	**2.2**	1	support::learning resources	1188	0.8
2	staff::quality	1788	**2.2**	2	assessment::standards	1065	**3.1**
3	unit design::methods	1704	2.0	3	staff::accessibility	1011	0.5
4	support::learning resources	1582	1.3	4	assessment::expectations	967	**3.3**
5	assessment::relevance	853	1.5	5	assessment::feedback	878	1.7
6	assessment::feedback	532	0.6	6	unit design::methods	849	0.5
7	unit design::flexibility	526	0.8	7	staff::quality	805	0.5
8	staff::teaching skills	503	0.6	8	staff::teaching skills	782	1.6
9	outcomes::intellectual	458	**9.0**	9	unit design::structure	750	**2.7**
10	outcomes::knowledge skills	427	1.6	10	unit design::flexibility	636	1.2

BA = best aspects; NI = needs improvement
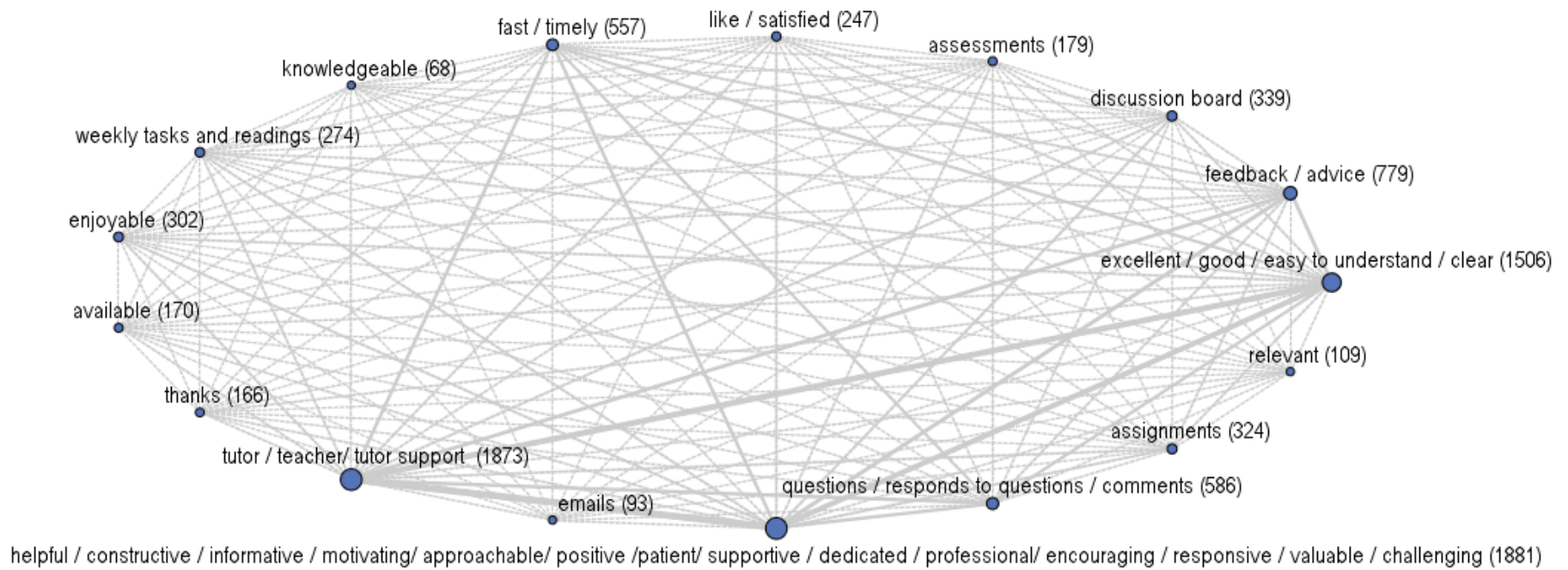
Figure 1: SPSS visualisation of student comments on teaching for Item 12 'What are the most helpful aspects of this unit'
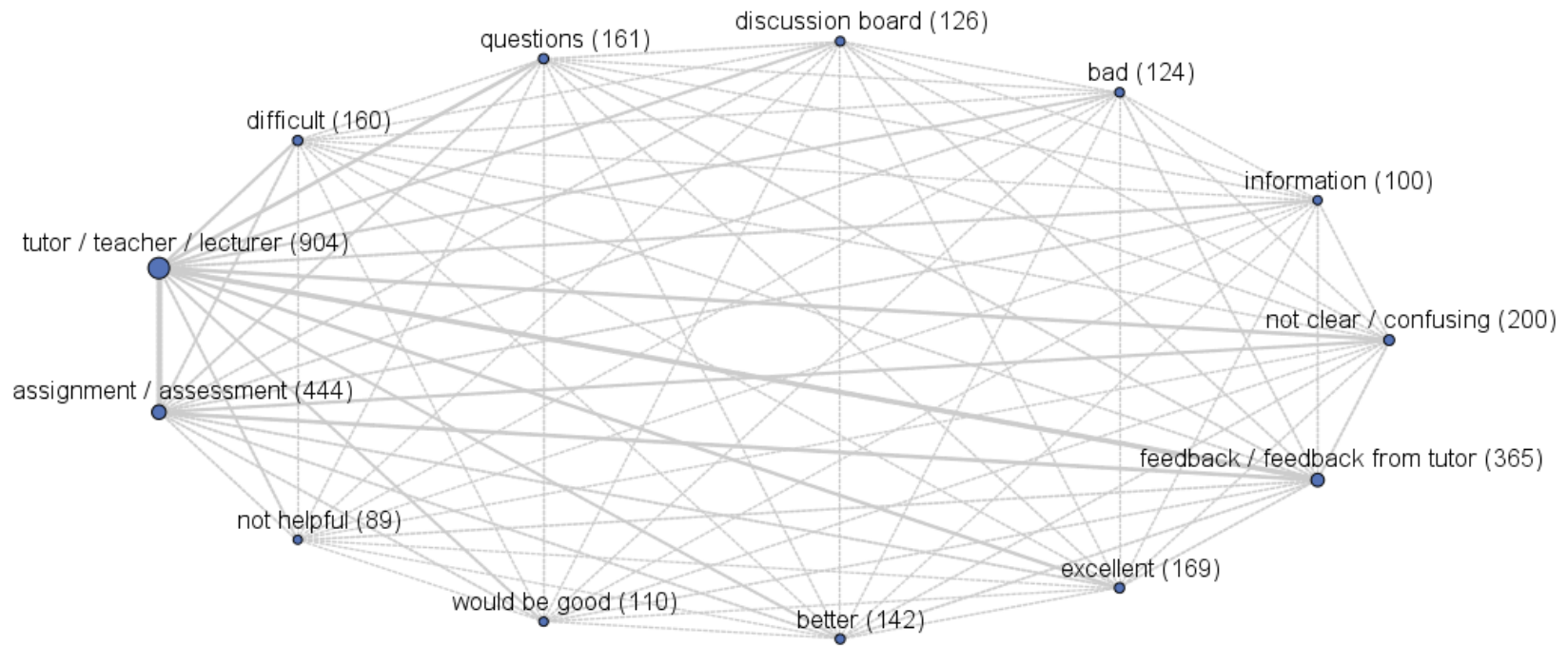
Figure 2: SPSS visualisation of student comments on teaching for Item 13 'How do you think the unit can be improved'

Discussion and Conclusion

We acknowledge that the response rate for the eVALUate survey is low (24.1%) and this is largely due to the fact that the students are asked to give feedback on their experience in two separate surveys, one distributed by OUA and one from Curtin University (eVALUate). Students are unlikely to give feedback twice and survey fatigue is a genuine concern. The students who studied in 2012 through OUA are predominantly female aged between 25 and 35 years and a higher percentage of females participated in eVALUate. Previous research on eVALUate consistently shows that females and older students are more likely to participate in eVALUate (B Oliver, et al., 2007). Further research is warranted to determine the views of non-responders and universities are constantly developing new strategies for increasing response rates to ensure evaluation systems capture representative samples. Despite the low response rate in this study, this large sample size does provide insights into the views of a large number of students learning online.

At Curtin, student feedback has been collected using eVALUate since 2005. Students studying fully online have consistently reported higher levels of satisfaction on all eVALUate items except for Item 7 (the quality of teaching). Students studying online in OUA report very high levels of motivation and engagement. This finding may be related to the student demographic: most students are older than 25 years of age and female.

This study of student perceptions of online units confirms that student experiences vary. For the majority of students, their experience is positive and they frequently comment on the quality and attitudes of their teachers indicating that they are accessible and responsive. For some units, students report that the teaching hinders their learning; their comments focus on the lack of clarity of communications and feedback, particularly in relation to their assessments. These findings are similar to those experiences reported by Curtin students through eVALUate and includes face to face, blended and online modes of delivery. Student feedback using eVALUate at Curtin consistently indicates that for 'the most helpful aspects', they comment most frequently on: 1) the methods of learning and teaching in relation to unit design, 2) the quality and attitude of staff, 3) staff accessibility and responsiveness, 4) learning resources, 5) assessment relevance, 6) staff teaching skills, 7) relevance in relation to unit design, 8) intellectual outcomes, 9) knowledge/skills learnt and 10) flexibility and responsiveness in relation to unit design. It is particularly notable that three of the six most frequently commented on 'most helpful' subdomains refer to staff. In addition, for the item about 'how units might be improved' students comment most frequently on: 1) methods of learning and teaching in units, 2) structure and expectations in relation to unit design, 3) learning resources, 4) assessment standards, 5) flexibility/responsiveness of unit design, 6) staff quality and attitude, 7) assessment expectations, 8) staff teaching skills, 9) assessment feedback and 10) relevance of assessments.

Prior to undertaking this study, the researchers anticipated that students would focus their comments on the learning resources, online technologies and challenges associated with learning online (Song, Singleton, Hill, & Koh, 2004). However, the findings of this research indicated that the online interactions with the teacher were most important to the student. The

importance of the teaching in providing clear goals has also been reported by Song et al (2004). Student comments on what was hindering their learning mostly focussed on feedback on their learning particularly regarding their assessments. This finding is consistent with student comments in units delivered either face-to face or in blended modes. Students often have difficulty identifying what feedback is; this may be part of the problem for students studying online as well as in other modes of learning. Teachers may have a role in educating students in the different forms of feedback they provide to assist their learning. Students also expect the feedback to be timely and asynchronous activities may hinder their learning. Clear expectations about the timing of feedback should be provided by the teacher. This is supported by a recent case study by Ladyshewsky (2013) indicating that teacher presence (both social and teaching presence) appears to influence student satisfaction with both feedback and quality of teaching and to positively influence student experience in and satisfaction with studying in an online unit.

The findings of this study may help university centres charged with providing professional development for teachers involved in online education in understanding the type of student who enrols in online education and those factors that help or hinder their learning. This research can provide a greater insight into successful e-learning and teaching.

Appendix

The eVALUate Unit Survey

Quantitative items with the following rating scale (Strongly agree, Agree, Disagree, Strongly disagree and Unable to judge). *Explanatory text in italics appears online by default.*

1. The learning outcomes in this unit are clearly identified. *The learning outcomes are what you are expected to know, understand or be able to do in order to be successful in this unit.*
2. The learning experiences in this unit help me to achieve the learning outcomes. *The learning experiences could include: face-to-face lectures, tutorials, laboratories, clinical practicums, fieldwork, directed learning tasks, and online and distance education experiences.*
3. The learning resources in this unit help me to achieve the learning outcomes. *Learning resources could include print, multimedia and online study materials, and equipment available in lectures, laboratories, clinics or studios.*
4. The assessment tasks in this unit evaluate my achievement of the learning outcomes. *Assessment tasks are those which are rewarded by marks, grades or feedback. Assessment tasks directly assess your achievement of the learning outcomes.*
5. Feedback on my work in this unit helps me to achieve the learning outcomes. *Feedback includes written or verbal comments on your work.*
6. The workload in this unit is appropriate to the achievement of the learning outcomes. *Workload includes class attendance, reading, researching, group activities and assessment tasks.*

7. The quality of teaching in this unit helps me to achieve the learning outcomes. *Quality teaching occurs when knowledgeable and enthusiastic teaching staff interact positively with students in well-organised teaching and learning experiences.*
8. I am motivated to achieve the learning outcomes in this unit. *Being motivated means having the desire or drive to learn, to complete tasks and to willingly strive for goals.*
9. I make best use of the learning experiences in this unit. *I prepare for and follow up on the learning experiences offered in this unit.*
10. I think about how I can learn more effectively in this unit. *I take time to think about how I can learn more effectively.*
11. Overall, I am satisfied with this unit. *Overall, this unit provides a quality learning experience.*

Qualitative items

12. What are the most helpful aspects of this unit?
13. How do you think this unit might be improved?

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