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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

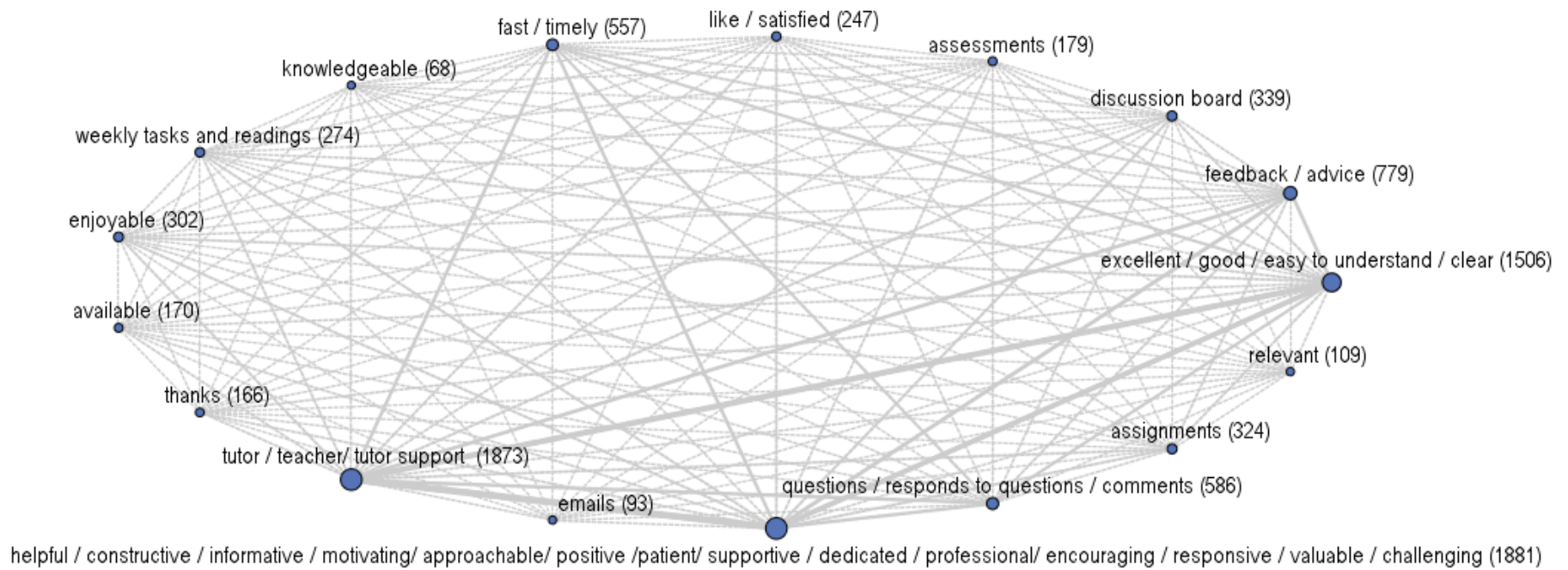| Best Aspects				Needs Improvement			
Rank	**Sub-domain**	**Total hits**	**BA/NI odds**	**Rank**	**Sub-domain**	**Total hits**	**NI/BA odds**
1	staff::accessibility	2227	**2.2**	1	support::learning resources	1188	0.8
2	staff::quality	1788	**2.2**	2	assessment::standards	1065	**3.1**
3	unit design::methods	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'
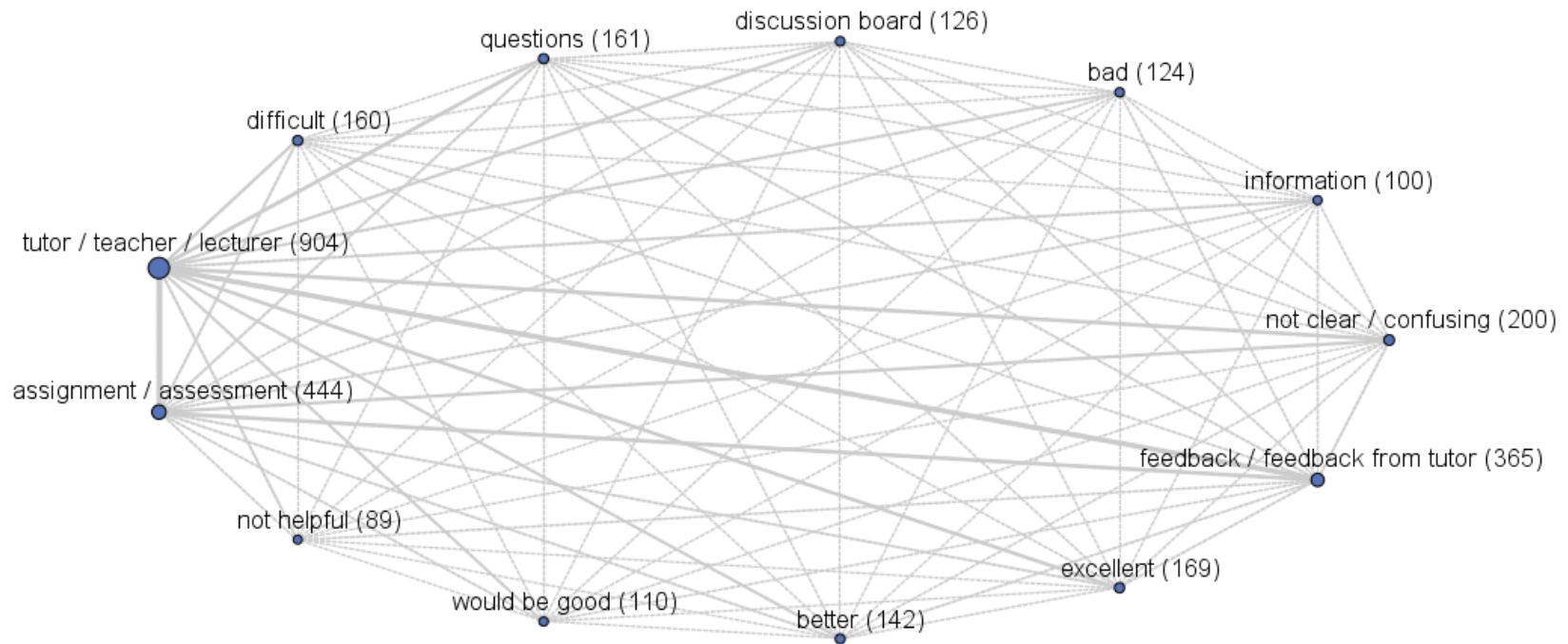
Figure 2: SPSS visualisation of student comments on teaching for Item 13 'How do you think the unit can be improved'

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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