Peer Assessing in Higher Education: Perspectives of Students and Staff

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The aim of this paper was to provide a brief overview of contemporary peer assessment literature and to report the findings of a project investigating the subjective experiences and attitudes of students and staff who participate in a peer assessment task. Twenty-four students, a lecturer and a subject coordinator participated in the study. Students completed pre- and post-peer assessment task surveys and the lecturer participated in a one-on-one interview. While students predominantly agreed that peer assessment was a positive and worthwhile experience, three themes emerged for future consideration, these are: validity and objectivity, confidence, and workload.

Introduction

A combination of increased access to Higher Education in Australia and the emphasis on workplace readiness of University graduates has led to a paradigm shift in Higher Education teaching from philosophical engagement toward workplace readiness and fit-for-purpose learning and assessment. A variety of strategies have been incorporated into contemporary Higher Education curriculum to meet this changing trend, including peer assessing. This paper presents an overview of contemporary literature on peer assessing in Higher Education, and reports the findings of a project investigating the subjective experiences and attitudes towards peer assessing of students and staff involved in an Exercise Physiology University degree program.

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While peer feedback is aimed toward formative learning processes (Khaw, Tonkin, Kildea & Linn, 2011; Liu & Carless, 2006) and peer marking is aimed at summative assessment (English, Brookes, Avery, Blazeby, & Ben-Shlomo, 2006; Jones & O'Connor, 2004), peer assessment appears to incorporate a combination of formative and summative feedback and assessment processes aimed at both improving learning and checking competency (Bloxham & West, 2004; Davies, 2006; Vickerman, 2009). Of note is the research by Davies (2006) who designed a feedback index that confirmed that feedback (formative) and marks (summative) were positively correlated.

There are some commonly reported reasons for why academics incorporate peer assessment in Higher Education. Peer assessment: (i) encourages higher order thinking skills (Ramsden, 2003) and deep learning (Race, 2007); (ii) diversifies learning experiences (Vickerman, 2009); (iii) enhances meta-cognition of learning (Vickerman, 2009; Wen & Tsai, 2006); (iv) increases student regulation and management of their own learning (Liu & Carless, 2006; Nicol & Macfarlane-Dick, 2006); (v) promotes student participation in learning and assessment (Khaw et al, 2011) and enhances student understanding of how peers learn (Wen & Tsai, 2006); and (vi) allows students to develop a better understanding of the process of and the nature of assessment (Hanrahan & Isaacs, 2001; Race, 2007). Therefore, peer assessment is aimed at improving overall student performance through engagement with active learning and assessment.

When evaluating the use of peer assessment in Higher Education, it is important to conceptualise the pedagogical framework that underpins peer assessment. Peer assessment practices focus on three of Brookfield's (1998) four lenses (self reflection, student feedback and scholarly engagement) and therefore should by nature provide a holistic approach to assessment practices. When assessment practices are designed with consideration of Brookfield's lenses of critical reflection (1998) combined with Piaget's experiential/active learning theory (Kolb, 1984) and Ramsden's (2003) deep-holistic approach to learning, assessments

become a tool not only for student learning but also for academic learning, evaluation and action.

Contemporary literature predominantly indicates positive student experiences and high reliability and validity of peer assessing, however contrasting evidence regarding improved subsequent learning and reports of negative student perceptions have also been reported. Positive student perceptions following participation in peer assessment include helping the students to understand what the teachers were looking for (Bloxham & West, 2004; English et al, 2006) and the complexity of the assessment marking process (Hanrahan & Isaacs, 2001; Rangachari , 2010; Warland, 2011), identification of areas for improvement (Bloxham & West, 2004), increased student responsibility (Papinczak et al, 2007), perceived improvement in learning (Papinczak et al, 2007; Rangachari, 2010; Vickerman, 2009) and improved subsequent assessment performance (English et al, 2006). Despite the perception by students that peer assessing enhanced their learning, English and colleagues (2006) demonstrated only a 1.39% higher final exam grade in students who participated in in-course peer assessing as compared to the control group, and this difference was not statistically significant.

Negative themes reported with respect to the student experience of peer assessment include concern for potential bias and lack of familiarity, knowledge and training that may result in invalid scores (English et al, 2006; Papinczak et al, 2007), the creation of a judgemental environment (Hanrahan & Isaacs, 2001; Papinczak et al, 2007), and the time-consuming nature of the process (Hanrahan & Isaacs, 2001). The incidence of negative responses differed depending on whether the peer assessment was formative or summative. For example, while students participating in formative peer assessment were relieved that no marks were involved due to concerns of potential bias and lack of ability to assess (English et al, 2006), students in other studies reported that the formative nature resulted in lack of effort and relevance (Hanrahan & Isaacs, 2001; Vickerman 2009).

Despite slightly higher marks awarded by tutors when compared to peer marks, it was deduced that peer marks were reliable because the discrepancy was consistent (Bloxham & West; English et al, 2006). Orsmond and colleagues (1996) identified that despite similarity in the overall score awarded by tutors and peers, analysis of each individual marking criteria highlighted only 18% agreement of marks. The reported 56% incidence of student over-marking and 26% incidence of student under-marking would have remained hidden if only the final mark was compared. Future peer assessment research should therefore consider all levels of marking, feedback and grading when comparing peer and tutor assessment.

In summary, contemporary peer assessment research identifies both positive and negative aspects of student participation. Therefore despite the consistent summation that peer assessment is beneficial, academics should consider the identified negative aspects of peer assessing and should make every attempt to eliminate or minimise these negative perceptions/experiences when designing and implementing peer assessment in Higher Education.

The aim of this project was to investigate Higher Education student and staff perceptions on the process and experience of peer assessment. The overarching research question to be addressed in the project was: How do staff and students perceive peer assessment in the final year of a University Clinical Exercise Physiology course?

Method

Participants

There were three categories of participants: students, the lecturer, and the subject coordinator. Twenty-four students enrolled in either the fourth (final) year component of the Bachelor of Clinical Exercise Physiology (n=10) or the 1-year Postgraduate Diploma in Clinical Exercise Physiology (n=14) participated in the study. Prior to participation, students provided written informed consent

with procedures approved by the University Human Ethics Committee. Fifteen students were female and all students had completed similar previous study, that being the equivalent of a 3-year Bachelor of Sport and Exercise Science degree. Students were required to complete the peer assessment task as a compulsory assessment component of the subject, however were free to decide whether or not to participate in the evaluation phase of the project. Students were aware that neither participation nor non-participation in the evaluation phase would impact on the grades or course outcomes. The lecturer who delivered the relevant subject content and who moderated the peer assessment marks and assessed the students' peer assessing ability, also provided informed consent to participate. The subject coordinator, the author of this paper, designed the assessment marking criteria (rubrics) that were used by the students to assess their peers, and by the lecturer to moderate and assess. The subject coordinator had no input into the moderation process.

Procedures

The project included five phases: (i) student completion of a pre-project survey on peer assessing experience and perceptions; (ii) student completion of the assignment and peer assessment of another students' assignment; (iii) lecturer moderation of marks and assessment of each students' ability to peer assess; (iv) student completion of a post-project survey; and (v) subject coordinator interview with the lecturer.

Prior to undertaking the peer assessment task, students were asked to complete a pre-project survey. Twelve students completed the survey that consisted of six open-ended questions as follows: (i) How many times have you participated in peer assessment at University? (ii) If you have participated in peer assessment, please comment on your prior experience with being assessed by peers at University; (iii) If you have participated in peer assessment, please comment on your prior experience with being an assessor of your peers at University; (iv) What do you think are the main purposes of using peer assessment at University?, (v) Do you expect any

positive/beneficial experiences to result from being involved in the peer assessment process, either as an assessee or as an assessor?; and (vi) Do you have any reservations/concerns about participating in the peer assessment process, either as an assessee or as an assessor?

All students enrolled in the Clinical Exercise Physiology subject completed a written assessment item worth 10% toward the final subject grade. The task was to design a 2-page client factsheet detailing important consumer information about a specific cardiovascular medication. Each student was then allocated another students' assignment to peer assess. The peer assessment included the provision of detailed comments/feedback as well as marks and a final grade. Students were provided with a detailed marking rubrics accompanied by detailed instructions on how and what to assess. Students were given a 2-week time frame to complete the peer assessment. Each student performed the peer assessment on one other students' work and each student knew whose work they were assessing and who was assessing their assignment. The subject coordinator made the decision to not mask the student identities for several reasons. Foremostly, the subject being undertaken by the students was designed to prepare the students for entry into clinical placement and then the workforce and therefore included a strong emphasis on professional practice skills such as receiving and providing constructive feedback to colleagues and to be socially and morally responsible for their actions. Secondly, previous research has reported a lack of effort or seriousness taken when students perform peer assessing (Hanrahan and Isaacs, 2001; Papinczak et al., 2007). The subject coordinator was cognisant of research indicating the potential negative consequences of bias and the creation of a judgemental environment (English et al., 2006; Hanrahan and Isaacs, 2001; Papinczak et al., 2007) and was mindful of developing an extensive marking rubric and set of instructions and expectations and to also ensure that students were given the opportunity to provide comment on this matter of known identities in the post-project survey.

Following submission of the peer assessments, the lecturer checked and where necessary, moderated the marks awarded for the factsheets. The lecturer then assessed each students' ability to perform a peer assessment. The lecturer scored each student on their ability to provide their peer with marks and feedback comments with respect to accuracy, correctness and depth (extent) of feedback provided. The ability to peer assess was worth an additional 5% toward the subject grade.

After receiving results and feedback on both assessment items, students were invited to complete the post-project survey. Twenty-two students completed this survey. The questions are included in Table 1 (open-ended questions) and Table 2 (Likert-scale questions). Prior to inputting the student survey responses, the subject coordinator facilitated a one-on-one interview with the lecturer. The interview questions included the lecturers' prior experience with peer assessing; thoughts on what the main purposes of peer assessment were; thoughts on the potential benefits and downfalls of peer assessment for the students, staff and the institution; feedback regarding the use of a marking rubric in the current project; feedback regarding the time required to moderate and assess; and thoughts on where/when peer assessment might be used in Clinical Exercise Physiology Higher Education in the future.

Analysis

All survey and interview responses and comparisons between student and lecturer marks awarded were entered into a Microsoft Excel spreadsheet and analysed by the subject coordinator. All survey responses were transcribed for individual interpretation of each question. Responses were then grouped by likeness with themes identified for discussion. Statistical analysis included the calculation of means, standard deviations, ranges, paired samples t-test comparisons and correlations between student and lecturer marks using SPSS statistical package version 19. For t-test and correlation analysis, statistical significance was set at $p<0.05$.

Table 1. *Post-peer assessing project student survey open-ended questions.*

PART A: completing the assessment task
1. Did you use the marking criteria to guide how you completed the assignment?
2. On the basis of the information provided in the marking criteria and assignment description, did you understand what was expected of you for this assignment? If not, what was unclear?
3. Did you change the way you completed this assessment task in comparison to other assessment tasks that were marked by a staff member, as a result of this assessment being marked by a peer? If so, please comment on how this process changed from other assessment completions.
PART B: Performing the peer assessment
1. What resources did you use to assist you in assessing your peers' work?
2. Upon reflection of the process of assessing a peers' work, please comment on your ability and willingness to critically appraise the work of a peer.
3. What did you find to be challenging, or were you least confident with, when assessing your peers' work?
4. What did you find to be easy, or were you most confident with, when assessing your peers' work?
5. Describe your experience of being a peer assessor with respect to your emotions/feelings.
6. Do you believe that the marking criteria accurately reflected the task? If not, what would you like to see altered and how?
7. Do you believe that the marking criteria provided you with sufficient information to complete the assessing task; and sufficient opportunity to comment/mark all aspects of the assessment task? If not, what would you like to altered and how?
8. How long (how many hours) did it take you to assess your peers' work?
9. What do you think are the most important things to consider when marking a peers' work?
10. What were the benefits of performing peer assessment with respect to your own learning and professional development?
PART C: being assessed by your peer
1. Did you have any reservation about being assessed by a peer? If so, what were these reservations and did they eventuate?
2. Describe your experience of having your work assessed by a peer with respect to your emotions/feelings.
3. What were the benefits of having a peer assess your work with respect to your own learning and professional development?

Table 2. *Frequency and mean ± standard deviation post-peer assessing student survey responses**

PART A: performing the peer assessment	SA	A	N	D	SD	*M±SD* (n=22)
Being a peer assessor was a positive experience for me	1	15	4	2	0	3.7 ±0.7
Being a peer assessor enhanced my learning of specific knowledge sets/skills	2	19	1	0	0	4.0 ±0.4
Being a peer assessor allowed me to acquire new knowledge	4	18	0	0	0	4.2 ±0.4
Being a peer assessor allowed me to experience an alternative perspective on how to complete the assessment task	4	16	2	0	0	4.1 ±0.5
Being a peer assessor allowed me to better understand the process involved in assessing	7	12	2	1	0	4.1 ±0.8
Being a peer assessor made me nervous	3	9	7	3	0	3.5 ±0.9
I was confident with being a peer assessor	0	9	8	5	0	3.2 ±0.8
The marking criteria was easy to understand and use	3	16	2	1	0	4.0 ±0.7
I would be willing to be a peer assessor again	3	13	4	2	0	3.8 ±0.8

* Students were asked to rate the extent to which they agreed with statements about peer assessment. Response options included Strongly Agree (SA: 5), Agree (A: 4), Neither Agree nor Disagree (N: 3), Disagree (D: 2), and Strongly Disagree (SD: 1).

Table 2 (Continued). *Frequency and mean ± standard deviation post-peer assessing student survey responses**

PART B: being assessed by your peer	SA	A	N	D	SD	*M±SD* (n=22)
Being assessed by a peer was a positive experience for me	2	12	7	1	0	3.7 ±0.7
Being assessed by a peer enhanced my learning of specific knowledge sets/skills	1	10	11	0	0	3.6 ±0.6
Being assessed by a peer made me exert more effort (spend more time, tried harder etc) on this assignment as compared to other assignments	0	9	7	6	0	3.1 ±0.8
Being assessed by a peer made me nervous	0	10	9	3	0	3.3 ±0.7
I was confident with being assessed by a peer	0	12	9	1	0	3.5 ±0.6
I would be willing to be assessed by a peer again	3	13	5	1	0	3.8 ±0.7

* Students were asked to rate the extent to which they agreed with statements about peer assessment. Response options included Strongly Agree (SA: 5), Agree (A: 4), Neither Agree nor Disagree (N: 3), Disagree (D: 2), and Strongly Disagree (SD: 1).

Results

Pre-project student survey results

Of the 12 students that completed the pre-project survey, nine reported no previous experience with peer assessment at University, two students reported a single prior experience and one student reported a range of three to six prior participations. Most of the prior events reported by this last student were associated with allocating individual student percentage contributions to group work, not peer assessment per se.

The three students with prior peer assessment experience detailed both positive and negative experiences. On being assessed, all three students reported confidence with lecturer moderation. Positive comments on being a peer assessor included 'with help from the tutor and input from others I found it a good learning experience' and 'it was a different approach but a good idea ... makes you think about more than just your assignment... broadens your knowledge'. Negative comments regarding previous experience included 'it was first year and all of the students were quite easy on each other', 'I was nervous that I was going to be too harsh or too easy', and 'it is hard to mark someone harshly'.

All 12 participants responded to the questions regarding the purpose of peer assessment and reservations/concerns about participating in peer assessing, with 11 students providing answers for potential benefits (Table 3).

Assessment results

The average ± standard deviation mark awarded by students for the assessment item was 40.5 ±3.1 out of 50, which was significantly higher than the average mark awarded by the lecturer of 38.9 ±2.4 (t(23)=2.653, p=0.014). Fourteen students over-marked, eight under-marked and two allocated the same mark as the lecturer. A correlation analysis carried out between the student and lecturer marks for the total mark as well as for each of the five criteria (each scored out of 10), provided r-values ranging between 0.43 and 0.93 for individual criteria (all p<0.05), and an overall mark correlation of r=0.499 (p=0.013). No individual criteria mark was significantly different between the student and lecturer. Students received an average mark of 43.4± 2.5 out of 50 from the lecturer for their ability to peer assess.

Table 3. *Student pre-project responses to the purpose, expected benefits and reservations of peer assessing (students were able to provide multiple responses for each question).*

The purpose of peer assessment in Higher Education	n=12
Learn another topic or greater understanding of a topic or widening knowledge	7 responses
Assess ability to recognise important/relevant information and identify flaws	4 responses
Give (constructive) feedback	3 responses
Critically analyse work of others	2 responses
Compare work to others and see how others interpret assessment	2 responses
Give students practice at accepting feedback	1 response
Learn about marking	1 response
Reservations about participating in peer assessment	**n=12**
No reservations	6 responses
I may not be impartial, may be too hard or too easy	3 responses
Lack of experience	3 responses
Difficult to critique if you don't know the topic	1 response
Expected benefits of participating in peer assessment	**n=11**
Learn about a new topic	6 responses
Compare to others and learn from others work	4 responses
Additional objective view with different ideas to improve learning	2 responses
Get constructive feedback	1 response
May eliminate high stress/tired marking as each student assesses one assignment – not the lecturer assessing all	1 response
Prepare for work where people have (and voice) different opinions	1 response
Not answered	1 response

Post-project student survey results

Part A: Completing the assessment task. All but one student reported using the marking criteria to assist with completing the assessment and reported that the marking criteria facilitated an understanding of what was expected of the assignment. Seventy-seven percent of the students reported that they did not change the way that they completed the assessment (as compared to other assessments). Specific comments explaining why some students did alter their approach included 'yes, I imagined being the marker when I was reviewing it (prior to submission)' and 'yes, it made

me think about what others may include and all possible ways to compete the assessment'.

Part B: Performing the peer assessment. The marking criteria was the most frequently reported resource used to assist with assessing peer's work (11 responses), followed by other journal articles or resources found on their own (10 responses) and references listed in the assessee's assignment (nine responses).

When asked to rate the extent to which they agreed with a variety of statements regarding peer assessing, most agreed that being a peer assessor was a positive and worthwhile experience (Table 2). Twelve participants agreed that being a peer assessor made them nervous and nine agreed that they were confident with peer assessing, however most participants agreed that they would be willing to be a peer assessor again (Table 2).

The most common responses regarding ability and willingness to peer assess were difficulty in remaining impartial or the want to be lenient (four responses), being willing to critically appraise and provide comments but less willing to provide an overall mark (three responses), not having confidence due to a lack of experience (three responses) and would have preferred if they had been blinded to who they were assessing (two responses). The commonly reported challenges with assessing a peer's work were providing an actual mark or knowing how much to penalise for errors (11 responses), difficulty with assessing a different writing style or layout (four responses), not being objective (three responses) and wondering whether the perception of work quality was realistic (two responses). Conversely, the most frequently reported aspects of peer assessing that students were confident with or found easy were assessing the presentation (five responses), the referencing (three responses) and the spelling and grammar (three responses); and using the step-by-step marking criteria (three responses).

Sixteen students reported that their experience of being a peer assessor was positive, although seven students reported being worried about offending their peer or feeling bad about deducting

marks. There were three responses regarding having difficulty being objective and two responses referring to the pressure involved in peer assessing knowing that they were being assessed on their ability to peer assess.

All participants answered yes when asked if the marking criteria accurately reflected the task and 15 respondents agreed that the criteria provided them with sufficient information to complete the task and comment on all aspects of the task. Four students indicated some difficulty with distinguishing between grades when using the marking rubric and one student commented that it would have been preferable to work through an example as a class prior to individually performing the peer assessment. On average (and median), students spent 3 hours performing the peer assessment.

Students reported between two and four items each when asked what they thought were the most important things to consider when marking a peers' work. The combined list of responses resulted in 18 words or phrases with the most frequent being 'correctness' as illustrated in the word cloud (Figure 1). The most common benefit reported for being a peer assessor was the opportunity to learn about another topic (11 responses). Other benefits included learning different ways to approach a task, learning how to improve own work, learning constructive feedback skills, having a new way to obtain knowledge, confirming own knowledge, and providing the opportunity to reflect on own assessment and how to improve it.

Part C: Being assessed by a peer. When asked to rate the extent to which they agreed with a variety of statements regarding peer assessing, most agreed that being peer assessed was a positive and worthwhile experience, despite 45% of students reporting being nervous or not confident (Table 2).

Figure 1. *Word cloud representation of the student post-project responses regarding the most important things to consider when marking a peers' work.*

When asked if they had any reservations about being peer assessed and if they eventuated, eleven students reported no reservations. The reservations identified by other students included knowing that an 'intelligent and efficient' student was marking their work so they put in more effort, people having different opinions on how to complete the task, the assessor potentially not putting in as much effort with marking as a lecturer would, being worried and embarrassed if marked by a 'smart' student, being judged negatively, and not having been trained in how to assess. Only one of these students answered the question about whether their reservation eventuated, and that students indicated that it didn't eventuate (being judged negatively). Thirteen students reported having 'no worries' about being peer assessed, with seven of these respondents further explaining that this was because the assessment was being moderated by the lecturer. Four students felt worried or daunted that the peer assessor would judge their intelligence and one student indicated that everyone in the class

was very professional and so had no negative feelings. Students reported that being peer assessed assisted with their own learning and professional development by learning different ways to interpret and complete an assessment (four responses), putting in more effort with the assignment and paying greater attention to the marking criteria (three responses each), and seeing what their peer thought of their work (two responses).

Lecturer interview results. The lecturer who moderated the peer marks and assessed each student on their ability to peer assess, had been teaching in Higher Education for 14 years and had been involved in peer assessment activities less than 10 times. The peer assessing activities had largely involved students evaluating group work contributions or providing comments and marks to the lecturer (but not to the peer). The lecturer felt that the main purpose for using peer assessment at University was to have students involved in the assessment process. The lecturer expanded on this point by indicating that he thought that the more advanced years would see more benefit or relevance whereas he tended to not see this when using peer assessment activities in the earlier years of the degree. This was thought to be due to insufficient knowledge and insufficient understanding of the assessment process. The lecturer hoped that students would benefit from peer assessing by becoming more interactive and having a deeper understanding of the content, work and processes, although this would require confidence and maturity.

The lecturer also indicated that potential negative aspects of peer assessing for students might be the opportunity to 'attack' others, and it may encourage students to focus on what the assessment looks like (superficial) as opposed to an interpretation of content correctness. Potential benefits to the teaching staff or organisation included potentially less staff member workload if the peer assessing was accurate, and the longer-term benefit of students developing advanced skills that will assist as they progress through later University years, the workforce or postgraduate study. Potential negatives for the staff and University could be increased workload in designing additional criteria or instructions

and when moderation is required, and therefore workload allocation models may be impacted.

When asked to comment on the marking criteria (detailed marking rubric), the lecturer commented that in its current form, it was difficult to differentiate between levels. The lecturer spent 15 hours moderating and assessing the students ability to peer assess. If the lecturer was to have performed all of the assessing without student involvement he approximated that it would have taken only 12 hours, therefore peer assessing was more time-consuming for the lecturer. The lecturer indicated that his involvement did not necessarily benefit him as the process was more time-consuming, however he did acknowledge that it was good to see students using a different skill set.

Discussion

Peer assessment is used within Higher Education for a variety of purposes including diversifying, encouraging and enhancing student learning (Khaw et al, 2011; Vickerman, 2009; Wen & Tsai, 2006), and promoting student participation and understanding on the assessment process (Hanrahan & Isaacs, 2001; Smith et al, 2002). In the current project, Clinical Exercise Physiology students reported that they believed the main purposes of peer assessing were to increase knowledge and learning and to be able to recognise what is important and relevant information (and what is not). After completing the peer assessment task the students also reported a perception of enhanced learning and knowledge acquisition and a better understanding of the assessment process. The lecturer indicated that peer assessing would be more effectively utilised in the later degree years. Students reported that the most important consideration when peer assessing was the correctness of the information, followed by fairness. Three major themes have emerged from the current results: validity and objectivity; confidence; and workload.

Validity and objectivity

Validity and objectivity refer to the accuracy and correctness of the assessing without bias. In the current study, students most often cited correctness and fairness as the most important aspects to consider when assessing peers. These items are also seminal to Higher Education staff and facilities where consistent and defendable standards of performance are required. The students reported willingness to provide comments (formative feedback) but were less willing to provide a score (summative feedback) due to the risk of offending the person whose work they marked, or on the chance that they would be judged negatively by the peer marking their work. The inclusion of lecturer moderation where necessary was therefore an important component to include in the current peer assessing project as it provided the means for an intervention to ensure validity was upheld and that subjectivity was eliminated. The student concern about objectivity and relief at moderation is demonstrated in the following student quote: 'I took it seriously and professionally, I felt (sic) to be fair but hoped I wouldn't find something that I'd have to take many points off for. I liked that if I marked something too high or too low that the staff would fix it.'

In the current study the peer score was worth 100% unless moderation was necessary. This differs from previous research where either peer assessing was completely formative (Vickerman, 2009), or accounted for 50-75% of the grade (Bloxham & West, 2004; Falchikov, 1995). Wen & Tsai (2006) indicated that students prefer the peer assessment to be worth a minor component of the score. Interestingly, even when peers provided feedback but not scores, concerns about validity were not alleviated in 15-20% of students (Warland, 2011).

When comparing the peer and lecturer scores, the significant difference in the overall score indicates an over-marking by peers however the significant correlations for all each individual criterion and for the overall score indicate consistent over-marking. The higher scores allocated by peers may be explained

by the peer's reluctance to offend or be too harsh, by their reported difficulty in choosing between grades on the marking criteria (and thereby choosing the higher grade), and by the peers' difficulty in knowing how many marks to deduct for errors. Concern with how many marks to deduct for errors was also highlighted by students in the study by Orsmond and colleagues (2004). Indeed, both prior to and after completing the peer assessment task, the concern with being impartial and being able to mark objectively remained. Therefore despite confidence in using the step-by-step marking criteria and acknowledgment that the criteria were suitable, students may have required further assistance. Such assistance may include practice using the marking criteria or reducing the criteria options from five (High Distinction, Distinction, Credit, Pass, Fail) to four options (Excellent, Good, Acceptable, Unacceptable). Of particular interest is that while in the current study the peers were more lenient than the lecturer, as also occurred in third and fourth-year science students (Falchikov, 1995), in a first-year medical student peer assessment report, the students were harsher than the tutors (English et al, 2006). This discrepancy may be indicative of the cohort year level. Fourth-year students would be more likely to have developed peer rapport and therefore may be more likely to feel "obligated" to be lenient.

Another factor that was likely to have influenced the student's concern for objectivity when peer assessing was the knowledge of the identity of the peer assessor and the assessee. While the subject coordinator made a conscious decision to disclose identities in order to prepare students for acceptance and provision of feedback and assessments while on clinical placement, as acknowledged with the following student quote 'It was a little daunting knowing someone else was judging my work but it's what happens in the workforce so it is probably good to experience it now', this contributed to reluctance with providing actual scores. A possible solution to include social and professional accountability but also to minimise subjective bias may be to perform peer assessment in groups, on group work. Therefore the assessment task and the assessment outcome are

collaborative efforts that require input from all students but are not the sole responsibility of one student.

Confidence

Some students indicated that they were nervous and not confident in assessing due to a lack of experience. Liu and Carless (2006) note that students express resistance to peer assessment due to perceived inexperience, while Wen and Tsai (2006) reported that past experience (and therefore familiarity) with peer assessment tended to reduce negative attitudes toward peer assessing. It may therefore be useful to adopt specific strategies aimed at enhancing student confidence. These strategies may include providing students with preparatory training on how to assess (Bloxham & West, 2004), working through examples of the assessment process, involving students in the design of the marking criteria (Orsmond, Merry & Callaghan, 2004), and introducing peer assessment early in the degree to establish familiarity. If peer assessment was to be introduced early, the author would recommend formative assessment only, with feedback moderated and facilitated by the teaching staff. This early peer assessment practice would act as a learning tool to develop critical appraisal skills prior to the transition to summative assessment.

Workload

The third theme to emerge from the current study was workload. In contrast to previous reports (Topping et al., 2000; Wen & Tsai, 2006), peer assessing was not time efficient for the lecturer. Similarly the subject coordinator spent approximately 4 hrs re-designing the assessment instructions and marking rubrics. Liu & Carless (2006) also noted an increased time requirement of academic staff undertaking peer assessing activities. In contrast to this increased workload for staff, peer assessing may be time efficient for students. For the current study, students spent on average 3 hr assessing their peers' work. This 3 hr was spent learning and critically evaluating a new topic and therefore appears to be a time efficient way to broaden knowledge in comparison to the 10-20 hrs spent completing the initial

assignment. Further, as represented by the following student quote, familiarisation with the process might further increase this time efficiency: 'it took a long time but I could see if I did it more it would be quicker and easier. I was willing to do it and would do so again as it's a good task and skill to learn.' Therefore, despite a slight increase in staff workload when including the moderation and the assessment of marking quality, the definite increased learning-time efficiency reported by students is expected to provide long-term benefit to all stakeholders due to an increased student basis of knowledge and understanding and professional attributes.

Conclusions

In general, students responded positively to the peer assessment task however were concerned with validity and objectivity and confidence, while the lecturer was concerned about the workload implications for staff and the ability of students to peer assess. While this project had a small sample size and was not able to quantify actual enhanced student learning due to ethical concerns associated with the use of a control group, some important considerations for future peer assessment practice in Higher Education have emerged. These considerations include a potential trade-off between blind assessing and social/professional responsibility, future enhancement of student confidence with peer assessing, and a transition process from formative-only to a combination of formative and summative peer assessment. When integrating peer assessment into the curriculum, staff should minimise student concerns in order for the most benefit to be gleaned from the learning and feedback process.

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