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Student Peer Feedback and Assessment in Higher Education

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Introduction

Peer feedback, review and assessment are a range of increasingly popular approaches to pedagogy in higher education which seek to engage students in active learning by developing their skills in assessing their work and that of their peers. They form part of a package of multiple assessments for learners which develop cooperative and collaborative learning and promote transferable lifelong learning skills (Nilson, 2003). Nicol, Thomson, & Breslin (2014, p.102) define peer review as “a reciprocal process whereby students produce feedback reviews on the work of peers and receive feedback reviews from peers on their own work”. Topping (2017, p.20) defines peer assessment as “...an arrangement for learners to consider and specify the level, value, or quality of product or performance of other equal-status learners.” Although the terms peer feedback, review and assessment are frequently used synonymously there are important distinctions; formative peer feedback or review is a form of assessment for learning, whereas peer assessment is a form of graded (summative), assessment of learning, which may or may not include feedback (Liu & Carless, 2006). There is also a wide variety of forms assessment can take including one way or reciprocal, in pairs or in groups (Topping, 2017). Peer assessment appealed to our group as an interesting way to innovate our teaching. This project explores peer assessment and produces a simple ‘how-to’ guide for lecturers considering implementing this approach. When we use the term peer assessment, we refer generically to peer review, feedback and assessment. When we use peer feedback, we mean formative assessment and when the assessment is graded, we specify ‘graded’ or ‘summative’.

The Effectiveness of Peer Assessment

There is a rigorous debate about the effectiveness of peer assessment spanning primary, secondary and tertiary and life-long education. Not all studies enthusiastically endorse peer assessment. There is scepticism and resistance to a radical shift to a student-as-assessor model, which is critiqued for lacking validity, reliability, accuracy, and for being uncritical, superficial, vague and content focused (Nilson, 2003; Haaga, 1993; Falchikov & Goldfinch, 2000). Students don’t always like it either with some studies finding they preferred traditional teacher feedback (Zhang, 1995), dislike the responsibility that comes with assessing their peers and feel incapable of providing it (Davies, 2003). Student assessments are vulnerable to accusations of partiality and prejudice including those based on race, gender and friendships (Nilson, 2003), and have shown a lack of correlation between lecturers and peer assessors’ final grades (Teixeira de Sampayo, Rodrigues, Jimenez-Romero, & Johnson, 2014). Anxiety about the validity and reliability of peer assessment are evident in a focus on training, checklists, teacher facilitation and monitoring (Topping, 2017).

Criticisms of peer assessment have some validity but there is strong evidence identifying cognitive (including reflection/ reflexivity, self-awareness, questioning, meta-cognitive), and affective (e.g. motivational) benefits for students (Topping, 2017). Peer feedback is

promoted as an effective method for engaging students to direct their own learning, evaluate how well they have performed based on a standard, assess the gaps in their performance, and identify how these gaps should be rectified (Moore & Teather, 2012). Peer assessment effectively develops students' comprehension, writing, communication, critically reflective and analytical abilities and transferable life skills (Topping, 2017). Nicol (2010) supports peer to peer feedback by stating that it should be the main strategy used to teach students how to evaluate work. Providing regular, well structured, peer evaluation opportunities allows the students to develop their judgement on what constitutes good work and model their own work at this level (Nicol, 2010). Peer assessment can empower students and promote critical reflection, analytical skills and independent thinking (Bartholomew & Peters, 2016; Falchikov, 2005) in a wide variety of disciplines from medicine (De La Cruz, Kopec, & Wimsatt, 2015) to the creative arts (Fleischmann, 2016) to engineering (Tong & Tien, 2019). Peer assessment also provides students with more, and more diverse, feedback than a lecturer can provide (Topping, 2017, Moore & Teather, 2012) and according to Nilson (2003) any resulting compromise between quality and quantity is justified.

Peer feedback engages students in a process of constructivist learning (Nicol, Thomson, & Breslin, 2014) and its collaborative basis is praised as superior to one emphasizing individual achievement (Liu & Carless, 2006). Moore & Teather (2012) integrated peer feedback within a professional social work programme as a strategy of professional identity which empowered students "by developing their ability to monitor, manage and evaluate their own learning, and to gain experience in the collaborative ways of working they would encounter after graduation" (Moore & Teather, 2012, p.198). Developing and expanding on generic skills such as reflection and problem-solving, increased responsibility, independent learning and preparation for professional roles (Moore & Teather, 2012).

Different learning occurs when providing feedback in contrast to receiving it, something students are very aware of (Nicol, Thomson, & Breslin, 2014). The main benefit students perceive from receiving feedback is that it highlights discrepancies in their work or performance and shows them how different reviewers can interpret their work. Peer feedback, guided by clear assessment criteria, has been found to be as effective a way for students to judge their peers' performance as the judgement of their teachers, and more effective than self-assessment (Patri, 2002). Moore & Teather (2012) argue peer feedback is an effective way for students to develop an understanding of standards and expectations. Peer feedback can help students to reduce errors and develop self-regulatory skills' but to do so it must be received openly and positively (Topping, 2017, p. 22).

Compared to receiving feedback, providing feedback engages students more actively in critical thinking and reflection through the application of the evaluation criteria. Nicol, Thomson, and Breslin (2014, p.118) show how students are effectively 'teaching themselves' in the process of improving their ability to provide feedback. When students are constructing feedback for others they are simultaneously reflecting on and comparing this work to their own work and that of other peers set against the evaluation criteria. And while offering others feedback raises as much concern and apprehension as receiving it from peers (Moore & Teather, 2012), the benefits can be greater for assessors (Lu and Law, 2012). Peer assessors, while enhancing the performance of their peers by providing 'positive affective feedback' and identifying problems and making thoughtful suggestions, they are effectively demonstrating their own performance (Lu & Law, 2012, p.257).

Implementing Peer Assessment

Peer-assessment means shifting from teacher-centred to student-centred learning. Drawing on Biggs and Tang (2011), Bartholomew and Peters (2016) show how peer assessment was a way of shifting their teaching to a more student-centred approach but both students and teachers can find this challenging and overwhelming because it can take them out of their comfort zone whereby the lecturer is considered the final authority and adjudicator of truth. Nonetheless, they found students were empowered as a result of their active engagement in the assessment process which extended their critical capacity to question and learn. Implementing summative peer assessment however involves a more radical shift to student-centred learning and raises more substantial questions of effectiveness and validity. Mindful of the distinction between formative and summative assessment tasks, Lu and Law (2012) found grading to have very little effect on the performance of either assessor or assessee. Liu and Carless (2006) argue how the dominance of the grading approach to providing peer assessment can undermine rather than enhance student learning. They suggest that although there may be pragmatic reasons to combine peer feedback with peer assessment, peer feedback should be 'an end in itself' or used as a precursor to grading (p.279). The quality and accuracy of grading criteria is an essential element of peer assessment. Students should be explicitly taught to understand the assessment criteria before commencing peer assessment (Price & O'Donovan, 2006). Clear instructions and a structured marking scheme will help students assess their peers and their own work, instead of relying solely on lecturers' feedback (Crisp, 2007). Cho, Schunn, and Wilson (2006) compared the peer vs. peer and peer vs. lecturer results and found the reliability of peer assessment depended on the reliability of the marking scheme, the clarity of feedback and assessment instructions and students' abilities and academic level. The ability to construct and deliver feedback should be considered a basic graduate attribute (Nicol, Thomson, & Breslin, 2014), although as noted earlier the challenges and benefits of peer assessment and feedback can be different for assessors and assessees (Topping, 2017). All students, especially struggling ones, require particular support in providing and benefiting from peer-assessment (Lu & Law, 2012). Students do not just automatically know how to act on feedback (Burke, 2009). They complain that feedback can be too brief, too negative and too difficult to decipher or to understand (Burke, 2009). Feedback needs to provide rich descriptions which students can then analyse and interpret (Burke, 2009). Students do not automatically know how to feed-forward the information they have received (Burke, 2009). Y1 Feedback (2016), states that there is low usage of peer feedback and peer-to-peer feedback as students are not aware of the potential benefits. Peer feedback can take various forms and styles and may be "confirmatory, suggestive, or corrective" (Topping, 2017, p.22) and good feedback which develops the students' comprehension should be solution rather than problem focused (Nelson & Schunn, 2009). Feedback should be effective, timely and appropriate and promote development not judgement or grading (Moore & Teather, 2012). Training in providing specific feedback that identifies problems and solutions either before or during the assessment process is required to achieve this (Yu & Lee, 2016; Lu & Law, 2012). Although graded assessments appeared to be less effective in improving performance of assessees than providing positive feedback, where grading is included students should explain their grading rationale (Lu & Law, 2012). The effectiveness of peer feedback relies as much on the justifications provided as the accuracy of comments (Gielen, Peeters, Dochy, Onghena, & Struyven, 2010). Students should be supported with specific training in assessing their peers using justifications for

their comments as well as guidance on how to be open to receiving feedback (Gielen, Peeters, Dochy, Onghena, & Struyven, 2010). Nilson (2003) also argues against an approach to peer feedback which tasks the student with providing judgment-based feedback to their peers. She claims students are 'cognitively ill equipped' to carry out such 'emotionally charged tasks' resulting in 'laxness' (p.34). The core problem is the fear students have of being judged and of judging others given how the relationship amongst peers is different than the relationship between student and teacher. Nilson (2003, p. 35) identifies three core problems with student peer feedback:

1. Students emotions affect their evaluative judgements
2. Students lack sufficient knowledge of standards and expectations for different types of assessment tasks
3. Students lack diligence and thoroughness in analysing assessments and writing up comprehensive feedback

In place of the judgment-based approach Nilson offers a 'identification and personal reaction' approach whereby students respond to different sorts of questions which do not channel them to make a judgment of their peers. Rather she suggests a range of alternative questions and guidelines for students assessing their peers such as "what do you think is the strongest evidence for their writer's/speaker's position? Why?" (p.36).

Taking judgement out of feedback requires students to be trained and supported in providing affective feedback (Lu & Law, 2012) which should also "verbally respectful and meaningful feedback" (Moore & Teather, 2012). Lu and Law (2012, p272) suggest "... Positive aspects of comments are not just about making other people feel good...They can help boost the motivation, interest, and self-efficacy of assessees, which in turn can enhance their performance."

There are many other criteria to be aware of when providing training to implement peer assessment such as the programme level and class size (Yu & Lee, 2016) and the importance of creating equal-status groups (Topping, 2017). Planning and training are essential to the success of introducing peer to peer feedback (Yu & Lee, 2016; Brookhart, 2017). For example, Yu & Lee (2016), suggest students write essays for review, then form their groups with one self- appointed leader. Training could then be delivered to the students to guide them through the process of commenting on the essays. Yu and Lee (2016), also suggest the way in which the peer reviews are arranged will affect the nature of communication and subsequent activities. Brookhart (2017), supports teaching students' self and peer assessment skills and recommends using a rubric which helps to focus class observations. The rubric acts as a guide as they are working on their assignments. Using language which undergrad students use is important to support clarity of criteria (Brookhart, 2017). Higher levels need more constructive feedback while large groups need more creative feedback activities to host the large class sizes (Yu & Lee, 2016). Collaborative observations of taped tutorials could improve learning and help tutors with large groups of students (Nicol, 2010). This is referred to as active/constructive/interactive/observing method (Nicol, 2010). In groups students observe a taped tutorial which they can pause and replay as they please and they evaluate the tape together. Peer feedback is a collective and situated activity in which students interact socially to facilitate group learning (Yu & Lee, 2016). Nicol (2010) supports peer evaluation and feedback stating that students evaluate one another's work, comment on problems and make suggestions to fix the problems. It is more demanding to

produce the feedback than to receive it and there is more learning for the student in producing the feedback (Nicol, 2010). Reflecting on the learning is a crucial step in the learning process (Nicol, 2010). He also comments on using the unique power of peer interaction for improving evaluation skills and dialogue without increasing the tutor's workload (Nicol, 2010). The grading of peer assessors marking and feedback has been suggested as a way to enhance the seriousness of the task (Bloxham* & West, 2004; Nilson, 2003) although this increases the lecturers workload and undermines one of the rationales of peer assessment. Moore & Teather (2012) identify four feedback processes to enable students to assess the level and make improvements to their work:

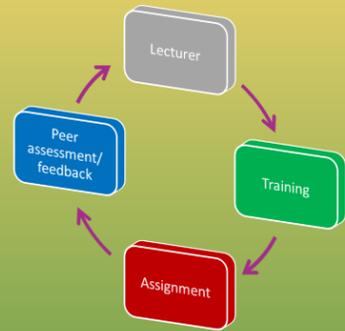
- Student dialogue about quality
- Monitoring and evaluation processes for their learning
- Planning of learning processes
- Engagement and performance enhancement processes

There is a lack of literature focusing on peer assessment of practical fieldwork. El-Mowafy (2014) is partly filling the gap, focusing on peer assessment of on-site field work by geospatial students. The author assessed students work for four elements: fieldwork, on-site recording of surveyed data, post-processing (computation and analysis of surveyed data) and presentation of results. Experiments with peer assessment of fieldwork in the field were carried out for two consecutive years (2011 and 2012). El-Mowafy (2014) concluded that the peer assessment process can be a useful learning strategy. For the practical work (e.g. setting up procedure, instruments/measurements checks, etc.), assessments were marked almost the same by colleagues and lecturers. The processing part of the assessment (e.g. analysis and presentation of results) showed differences in marking between peer assessors and lecturers. Use of technology in practical work assessment allow students to speed up the marking process and focus their attention on the quality of learning, while the technology help the assessment procedure (El-Mowahy, 2014).

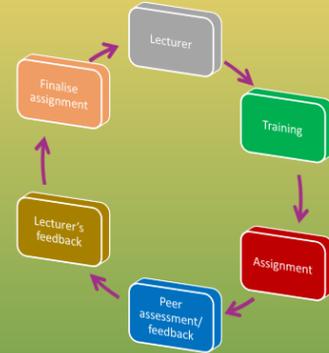
Summary

Student peer assessment is an innovative approach to learning and teaching. It gives students the ability to monitor and evaluate their progress while highlighting the gaps in their own education. It prepares them to give and receive peer feedback and promotes life-long skills which can be used in their future professional career. It requires careful planning and specific training to be implemented effectively. It is an effective, worthwhile and popular approach in higher education pedagogy.

Student Peer Feedback and Assessment

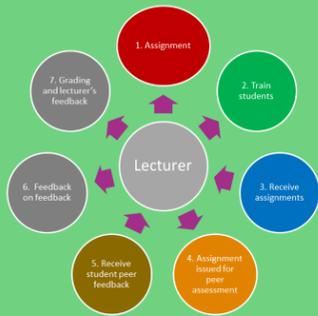


Postgrad students

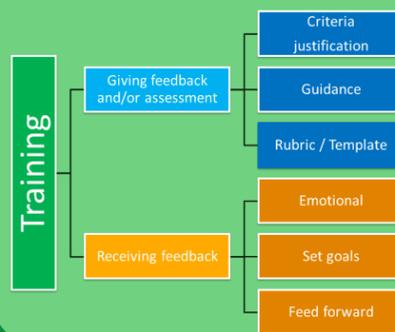


Undergrad students

Element 1 - Lecturer



Element 2 - Training



Element 3 - Assignment

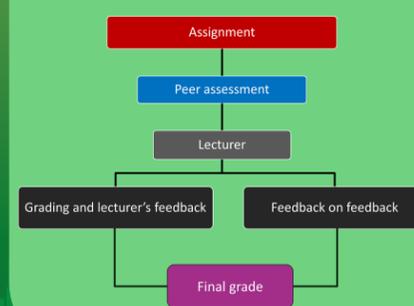


Figure 1 Learning Resource: Student Peer Feedback and Assessment Stages infographi

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