Peer Assessment as a Teaching and Learning Process: The Observations and Reflections of Three Facilitators on a First-Year Undergraduate Critical Skills Module *

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Abstract

This article reflects on the experiences and observations of three facilitators as they facilitated first-year undergraduate students in a peer assessment exercise. The peer assessment exercise in question is an integral part of the new Critical Skills module developed by Maynooth University and the focus of this article is on the facilitators' reflections of how this assessment approach succeeded in terms of intended and unintended learning outcomes. The learning outcomes are explored using four categories developed by Boud, Cohen and Sampson (1999) – Team-work and Collaboration; Critical Enquiry; Communication Skills and Learning to Learn. The article also includes reflections on certain challenges and concerns that arose and bear consideration when adopting peer assessment as a teaching and learning strategy.

Keywords: Peer assessment, critical skills, learning to learn, reflective practice, assessment in Higher Education

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Introduction

Peer assessment is becoming increasingly widespread in higher education as educators seek to diversify assessment methods and engage students in the assessment process (Bloxham and Boyd 2007). In simple terms, peer assessment refers to students assessing their peers' work and providing grades and/or feedback. There are a range of terms to describe the process, such as, peer tutoring, peer instruction, peer assisted learning, and so on. Topping (1998) defines peer assessment as, 'an arrangement in which individuals consider the amount, level, value, worth, quality, or success of the products or outcomes of learning of peers of similar status' (Topping 1998: 250).

In this article we present the experiences and observations of three facilitators about a peer assessment exercise which was carried out with first-year undergraduate students. The exercise in question is an integral part of the new and ambitious Critical Skills module for first-year undergraduate students developed by Maynooth University. The module seeks to develop students' skills in dealing with complex arguments, evaluating evidence, making balanced judgements and communicating their ideas clearly, both verbally and in writing. As part of the module's innovative approach, the assessment process incorporates a range of techniques, including a peer assessment exercise.

The focus of the article is on the facilitators' reflections about how this assessment approach unfolded in terms of intended and unintended learning outcomes. The learning outcomes are explored using four categories adapted from Boud, Cohen and Sampson (1999): Collegiality and Collaboration; Critical Enquiry; Communication Skills and Learning to Learn (Boud, Cohen and Sampson 1999: 415-416). The article also includes reflections on certain challenges and concerns that arose, which we feel need consideration when adopting peer assessment as a teaching and learning strategy.

While the exercise itself was called 'peer edit' on the module descriptor, for the purposes of this reflection, and because the term used can produce different results, as will be discussed, we will use the term peer assessment, as we feel that this is a more accurate term for the exercise. [1]

Rationale for Peer Assessment in Higher Education

Kollar and Fischer (2010) contend that peer assessment is 'an important component' of 'a more participatory culture of learning' aiding 'the design of learning environments', as well as being, 'fundamentally a collaborative activity that occurs between at least two peers' (Kollar and Fischer 2010: 344, 345). Facilitating students to partake in some form of assessment interaction alters the balance of power and encourages some control over their own learning, where, as Vickerman (2009) notes, peer interaction of any form engages students in the development of their own learning, not only academically, but cognitively and emotionally (Vickerman 2009). Bloxham and Boyd (2007) list the benefits for students in participating in peer assessment:

- It helps them to understand the academic standards of the module
- It helps them to understand assessment criteria and how they are applied to students' work
- It helps them to understand alternative approaches to academic tasks
- It develops their ability to make judgements and justify a point of view
- It develops their ability to give constructive feedback to peers
- It prepares them for autonomous learning by building their capacity to monitor their own progress rather than rely on a third party to do it (Bloxham and Boyd 2007: 62).

Leitão (2000) found that when reviewers provided counterarguments of their peer's thesis, this resulted in high level cognitive processes, while from an educator's perspective, peer assessments have valuable and practical benefits. In the current context of Higher Education, where large classes are common, individual feedback and formative assessment have become increasingly difficult to deliver. Crowley (2011) notes that, 'much of the evidence does recognise large class size as a deterrent to student engagement' and that there is 'overwhelming agreement that the key to effective instruction and student learning, regardless of class size, is

1 For a brief discussion about the various meanings, see 'Peer Review vs. Peer Response (vs. Peer Editing)', at Supplemental Writing Skills, Grand Valley State University, Michigan [online]. Available at https://www.gvsu.edu/sws/peer-review-vs-peer-response-vs-peer-editing-72.htm, accessed 14 May 2016.

engaging students in active learning' (Crowley 2011: 2). In addition, Waddington (2011) found that one of the most challenging aspects of teaching large groups is the difficulty with providing 'prompt, focussed and helpful feedback' (Waddington 2011: 5). As experienced educators we regularly find ourselves under significant time pressure as we struggle to deliver a complex curriculum in a way that engages large groups, while also accommodating the increasingly diverse, individual needs of students engaging in higher education. Consequently, despite our best intentions, opportunities to provide individualised, detailed and formative assessments of students' work are rare.

Kearney (2013) argues that assessment requirements are a core part of the learning process and the predominant focus for many students. Citing research carried out by Falchikov (1986) and Bloxham and West (2004), which found that peer assessment helped students learn, developed their critical thinking skills and enhanced their understanding of assessment standards, Kearney contends that educators should design assessments that involve and engage students and that build essential skills such as 'critical thinking and autonomous learning', whilst also inspiring 'innovation and creativity' (Kearney 2013: 876).

Similarly, however, a note of caution is needed in regard to some aspects of this assessment approach. A number of important issues have been raised by students and teaching staff in higher education institutions around the limitations and risks of peer assessment (Patton 2012; Kaufman and Schunn 2011; Vickerman 2009). A consistent theme in the research points to concerns around the accuracy and validity of feedback from peers. Vickerman notes that students have a tendency to 'over-mark', particularly if the process takes place in small established groups and/or if the identities of assessor and assesse are known (Vickerman 2009: 224). Additionally, Patton's qualitative study on undergraduate students' experiences of peer assessment argues that some students prefer facilitators to take responsibility for assessment as they do not consider that their peers have the necessary 'expertise' required to grade their work. Patton notes that the epistemological expertise of facilitators and professors invests them with the legitimacy and authority to assess student work – when this expertise is absent, students are less likely to take on board critiques of their work (Patton 2012: 723). As one undergraduate student remarks: 'The majority of us are just undergraduates and we'd rather be

marked by someone who has been in the field and knows what they're talking about' (cited in Patton 2012: 724). Equally, studies carried out by Foley (2013) and Kaufman and Schunn (2011) found that these factors led to some students perceiving the peer assessment process as inconsistent and unfair. Judging the written work of students from across many disciplines is, in itself, a difficult task for facilitators, let alone first-year undergraduates. Students have reported feelings of anxiety around having to grade their peers when lacking experience in conducting this form of assessment (Brown, Rust and Gibbs 1994). As Light, Cox and Calkins (2009) note: 'Assessing students is perhaps the most emotionally sensitive part of teaching. It is intellectually demanding for teachers and can be socially disturbing and divisive for students. [...] Associations with right and wrong can ... [create] fear and a loss of confidence' (Light, Cox and Calkins 2009: 200-201).

The Peer Assessment Exercise in Practice

The peer assessment discussed in this article is part of a Critical Skills module open to first-year students across all disciplines in Maynooth University. The module has three variations and comprises weekly lectures from the arts, social sciences, sciences, mathematics and statistics, along with bi-weekly small-group tutorials. The overall aim of the module is to encourage students to critically engage with academic ideas and texts, to evaluate evidence and to contribute to academic debate in a thoughtful and rational manner. The module is assessed using a diverse range of assessment methods, including weekly reaction papers, oral presentations, group work, class participation, academic essay-writing, and an in-class examination. Intended learning outcomes include:

- Reading and deconstructing academic texts effectively
- Evaluating arguments from several sources to reach an informed opinion
- Formulating coherent arguments and counterarguments
- Improving oral communication and presentation skills
- Planning and writing strong academic essays
- Drawing on credible sources and using appropriate citation and references
- Collaborating effectively in group settings (Critical Skills Module, Maynooth University, 2015).

The essay component of the module is conducted in stages, commensurate with the cognitive domain of Bloom's taxonomy[2] (See Table 1). Each student reviews a draft essay written by a peer and each student has their own draft essay reviewed. The peer assessment element is termed 'Peer Edit Exercise' and is a constituent element of a larger Critical Skills Research Essay. Each student is required to read a peer's draft essay and assess it using a pre-defined set of criteria. To complete the peer assessment component, students provide a written critique of their peer's work, which includes constructive criticism and recommendations.

The peer assessment exercise was designed to minimise any apprehension students might have about grading or indeed, being graded by their peers. The students concentrated on communicating feedback to their peers, clearly and concisely, under a set of criteria designed by the module co-ordinator. The quality of the written feedback was graded by facilitators only. This served to incentivise students in that they would be graded on the quality, usefulness and validity of their feedback. It did not matter if the student receiving the feedback was not in agreement with their remarks as the exercise was about learning how to critically reflect on a text, guided by the given criteria, and how to effectively communicate that reflection and analysis in writing as well as verbally. This process was carried out over one week to ensure timely and focused feedback.

Bloom's Cognitive Domain	Stages of Critical Skills Research Essay			
	Outline and Thesis Statement	First Draft of Essay	Peer Edit Exercise	Completed Essay for Submission
Remembering	●	●		
Understanding	●	●	●	●
Applying	●	●	●	●
Analysing		●	●	●
Evaluating			●	●
Creating				●

Table 1. Stages of the assessment process mapped to and adapted from the cognitive domain of Bloom's Taxonomy.

2 For more information on Bloom's Taxonomy and the Cognitive Domain, see Anderson, L.W. and Krathwohl, D.R., (2001). *A Taxonomy for Learning, Teaching, and Assessing* (Abridged Edition). Boston, MA: Allyn and Bacon.

The teaching and learning approach taken by the three authors of this article are rooted in pre-defined learning outcomes which can be summarised using categories adapted from Boud, Cohen and Sampson (Figure 1), where they set out the 'skills or attributes associated with peer learning and assessment' (Boud, Cohen and Sampson 1999: 415–416).

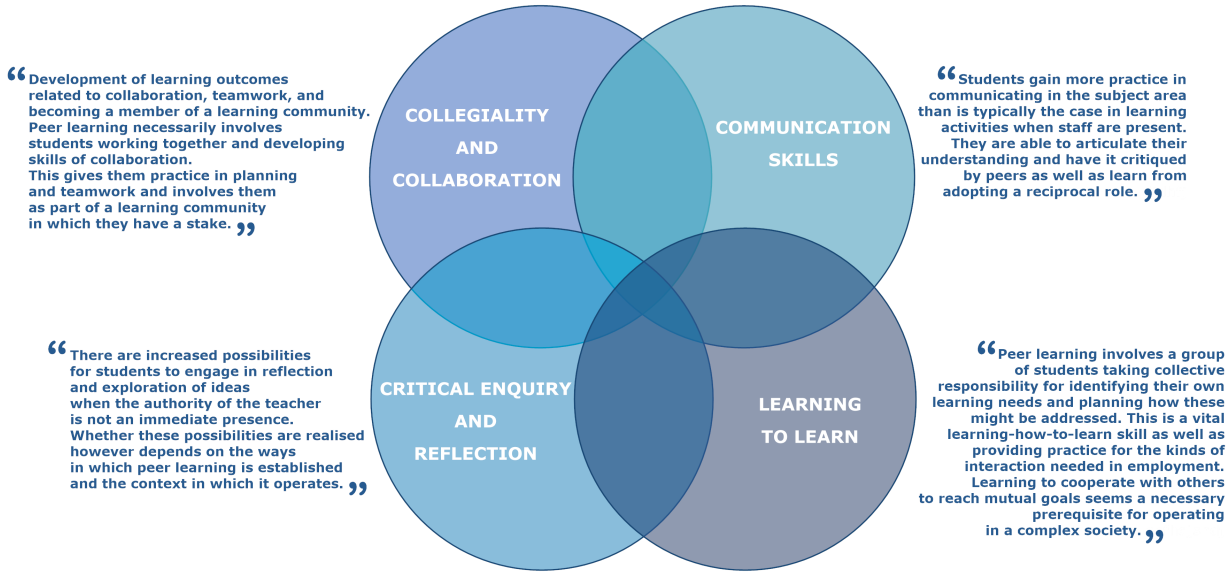

Figure 1. Learning outcomes of the peer assessment process (Adapted from Boud, Cohen and Sampson 1999: 415–416).

In our view, consultation with students is an essential element in the peer assessment process. The students, with the support of the facilitator, discussed how to approach reviewing a peer's work and how to apply the marking criteria. The criteria included the coherence of the thesis statement; the credibility of the arguments put forward; the use of sources, quotations and/or examples; paragraph structure; overall structure, writing style and presentation. Each student submitted a written account of their assessment, clearly justifying their comments and recommendations, which was the only part of the peer assessment process used for formal marking.

Whilst the overall structure of the peer assessment exercise was set out in the module descriptor, facilitators were able to adapt the exercise to each class group, taking into account such variables as group dynamics, individual student needs and confidence and skill levels

within the groups. As a result, we adopted two approaches to the peer assessment exercise (See Figure 2). In the first approach, the process was guided by the students' preference for double-blind assessment, that is, where both the author of the essay and the grader would remain anonymous. In the second approach, a paired peer assessment took place where the groups did not express a preference for anonymity.

Figure 2: Paired and double-blind approach to Peer Assessment Exercise

Findings

The findings here are drawn from our reflections and observations of the peer assessment exercise and are broadly arranged into two sections. The first section explores peer assessment as a learning tool for the undergraduate student, its role in facilitating the development of critical skills, as well as in delivering a range of intended and unintended learning outcomes. The second section reflects on peer assessment as a teaching methodology, paying special attention to essential pre-conditions for peer assessment to work effectively in a learning environment.

Peer Assessment as a Learning Tool

The uniqueness of the exercise as a model for assessment of learning development is drawn from the 'skills or attributes' concomitant with Boud, Cohen and Sampson's categories of learning outcomes in relation to exploring students' learning and development throughout the peer assessment exercise (See Figure 1).

Collegiality and Collaboration

One of the unexpected learning outcomes was the change in the atmosphere in the classroom as the students participated in the exercise. Group work is an essential part of the teaching and learning strategy of the Critical Skills programme. Given that students had been participating in group work exercises for a number of weeks prior to the peer assessment exercise, collegial relationships were emerging, with learners feeling increasingly comfortable in each other's company; they had collectively begun to perceive themselves as a group (Schein 1988).

The growing perception of themselves as a group meant that the nature of the peer exercise constituted a social process based on interactive learning within a supportive environment resulting in peer learning where students valued 'cooperation over competition' (Boud, Cohen and Sampson 1999: 415). As a result, rather than the usual competitive positioning that takes place in formal education settings, the students had the opportunity to collaborate and work together. The peer assessment exercise appeared to deepen the collegial atmosphere within the classroom and lay the groundwork for possible student collaboration outside the class.

The paired approach had the added advantage that students could discuss their assessments face-to-face and seek clarification on certain points if needed. Upon reflection, the paired approach facilitated a stronger group bond as there were more opportunities for valuable dialogue and reciprocal learning (See figure 2).

Communication skills

An integral element of the exercise is active discourse, both between reviewer and author and between all participants in the group, as well as with their facilitator. This comprises collaborative discussion on the processes involved in peer feedback as well as essay writing strategies, expressions of anxieties or queries about the process, individual reflections on the learning experience prior to and post the assessment exercise, and the more formal aspect of

the exercise where reviewers and authors are requested to exchange feedback and elaborate on comments; if adopting the 'Paired Approach'. It was noted that the 'Paired Approach' to the exercise provided more opportunities for direct dialogue with peers than the 'Double-Blind Approach'. Students appeared to take feedback from their peers quite seriously and it is possible that they are more comfortable admitting their difficulties or confusion to each other. Moreover, students speak the same language in terms of the stage of learning they are at. As a result, students received feedback that was straightforward, useful, and at an appropriate level.

Ridley (2004) cites conversations as integral to student success and we found that open dialogue between students and facilitators increased the value of learning achieved from the exercise. Additionally, discussions prior to and after the exercise broadened students' understanding of assessment and allowed authors and assessors to clarify and, in some cases, justify comments and recommendations. Kollar and Fischer (2010) set out the potential benefits of this kind of discourse, noting that it 'may evoke cognitive and discursive processes that trigger a deeper elaboration of the material and, thus, lead to better learning' (Kollar and Fischer 2010: 245).

We all noted the improvement in the students' written work throughout the process. Students appeared to gain considerable insight into their own writing and performance from the act of considering the work of others (Topping 1996). Moreover, students seemed more inclined to assess, edit and critically reflect on their own work.

Critical enquiry and reflection

The peer assessment exercise, in our view, is particularly effective in encouraging students to 'talk it out' and to 'think it out'. There were demonstrable improvements in the clarity and coherence of students' work when they were required to explain and justify their thinking process, either orally or in writing. Students were no longer writing simply for themselves, purely for assessment or for us as facilitators; they were now writing for a wider public audience and presenting their research to their peers. They were learning to critically reflect and respond to another author and determine the most effective way to present their feedback in writing.

Much of the written feedback provided guidance from the reviewer as to how their peer might go about restructuring their essay thesis or tackling a particular writing issue, in addition to pointing out grammatical and typographical errors. We felt this this process led to higher order thinking and a deeper approach to learning.

Learning to learn

Significant improvements were observed in students' ability to engage in, and grow from, individual and collective tasks. The incremental nature of the exercise supported students' immersion in a comprehensive learning process: taking them from drafting a thesis statement; to receiving formative feedback from the facilitator; to writing a first draft of a research assignment; to evaluating and assessing a peer's assignment; to making judgements based on an external, relatively objective, set of criteria; to providing constructive criticism in a thoughtful and considerate manner; to reflecting on the merit and value of the exercise and to incorporating this learning when producing a final draft of their research essay, thereby linking with the cognitive domain of Bloom's taxonomy (See Table 1).

Through the act of responding to their peer's writing, students began to address their own needs as writers and evaluate their writing from the 'view of the reader' rather than simply from the author's perspective; thereby moving towards the idea of writing for a purpose or with a particular outcome in mind. Additionally, the student became the facilitator of learning for their peer. In this way, the student took responsibility for their own learning as well as for somebody else's.

As a result of the exercise, students made a noticeable improvement in terms of clarifying their thesis statement, sharpening their argument, incorporating sources and in the overall structure of the essay. In other words, a strong framework for building on the skill of academic writing had been achieved. We noted marked differences between the standard of work completed by students who participated fully in the peer exercise and students who partially completed the exercise or who did not participate at all.

Peer Assessment as a Teaching Tool

Whilst the main focus of this article is on the impact of peer assessment on student learning, we would also like to include some of our reflections on how peer assessment impacts on teaching practice. Teaching staff in Higher Education Institutions are required to manage large class sizes and diverse student needs and, as noted earlier in this article, peer assessment appears to have a number of advantages over more traditional forms of assessment.

We would agree that there are significant benefits to the peer assessment exercise, not least in terms of an increase in the immediacy and volume of formative feedback provided. A shift towards more student engagement in the assessment process has the combined advantage of reducing the amount of formative feedback produced solely by facilitators and of creating a less passive assessment experience for students. Peer assessment allows students to improve thinking and writing strategies in real-time – in other words, students can immediately apply learning from formative feedback to their work (across all modules) rather than waiting for the summative grade and feedback from the facilitator at the end of the module.

We also found that the inherent multi-skill nature of this exercise allowed us to identify individual strengths and weaknesses in writing, editing, verbal communication, team work, and analysis, thereby 'enhancing the diversity of learning experiences as well as supporting individual student learning needs' (Vickerman 2009: 222). One student, for instance, showed considerable insight into the analytical 'edit' process, scoring quite high on the quality and effective communication of their comments, feedback and advice to their peer. At the same time, the standard of writing in this particular student's draft essay was consistently poor. On the one hand, therefore, this exercise served to highlight the lack of structure in the student's written work and the need for improvement in writing skills through experiential practice. On the other hand, attention was drawn to the student's strong ability for analysis, verbal communication and reasoning.

Despite the many positives of this experience, however, we would like to emphasize that peer assessment should not be viewed as a short-cut or easy option for facilitators. Whilst the exercise did produce large amounts of feedback for individual students, a significant amount of work is needed to prepare students for the process and to ensure that the experience is both beneficial and positive. In addition, Higher Education Institutions have a duty of care for their students and third level students have diverse needs. Facilitators need to be mindful of the wide range of potential pitfalls when carrying out peer assessments; such as, for instance, considering students with learning difficulties who might feel vulnerable about sharing their work with other students. Additionally, students from certain religious, cultural and/or ethnic backgrounds may, for instance, find it difficult to work with members of the opposite sex.

It is also important to recognise that students are novice peer assessors. Whilst we found that peer feedback, on the whole, was accurate and considered, even with the clearest guidelines in place, there is a potential for different types of bias to unduly influence feedback from peers. Much has been written about the possibility of bias in academic peer reviews undertaken by experienced postdoctoral researchers and academics (See, for example, Lee et al. 2013 and Rees 2011). We noted that assessing work in an objective manner was problematic for some students and instances were observed where negative feedback was given because the assessor disagreed or simply did not like the arguments being made in the essay. Additionally, in one class it was noted that mature students and male students were more likely to take an authoritative stance than their female counterparts.

Accordingly, there is a responsibility on the part of the facilitator to ensure that students are encouraged to actively engage in the feedback process by evaluating the quality of the feedback and deciding whether there is sufficient justification for the comments and recommendations put forward. We found that students benefitted from a thorough introduction to the peer assessment exercise which included an open discussion on the purpose of assessment in general, specific grading criteria and intended learning outcomes, as well as key concepts such as ‘objectivity’ and ‘constructive criticism’. Planas Lladó et al. (2014) note that students feel more comfortable and confident in carrying out peer assessment when they are given clear explanations of the procedure. Thus, ‘training and explanatory work by [teaching staff] is critical’ (Planas Lladó et al. 2014: 604).

Conclusions and Recommendations

Overall, we feel that the peer assessment exercise was one of the most successful teaching and learning initiatives of the module. Success is understood here as the extent of student engagement with the exercise, the positive feedback from the students and the level of improvement in a range of skills that the exercise generated. Similar to the findings cited in various studies (Vickerman 2009; Hunt and Hutchings 2014; Planas Lladó et al. 2014), we agree that this assessment approach facilitates students' ability to:

- work collaboratively and collegially with peers
- objectively critique a peer's work and provide constructive criticism
- understand assessment and grading standards
- communicate opinions orally and in writing
- redraft and proofread their work
- evaluate their own work in an objective manner
- engage in a reflective learning process.

As facilitators, we noted that the exercise supports the development of critical skills including, analysis and evaluation, making judgments and providing evidence and support for decisions made. The students were better able to communicate, both in writing and verbally, to actively give and receive feedback, as well as reflect on the process and their input into it. In addition, the exercise provided students with detailed and timely formative assessments of their work, which is not always possible, given current student numbers, or when facilitators take sole responsibility for assessing student work. Furthermore, the students took an active, rather than a passive, role throughout the exercise and consequently, appeared to take more responsibility for their own learning process.

The exercise also provides the students with a diverse assessment experience. Students participated in active dialogue with their peers (participative assessment). They were graded on the quality of feedback provided and on their personal reflections of the entire exercise in a reaction paper (qualitative assessment). The exercise included both formative and summative assessment, with learning scaffolded by facilitators via guidelines, discussion and grading rubrics. In our view, peer assessment was a successful exercise in terms of its positive impact on student writing. When informally asked for their views after the exercise, the vast majority of students agreed that they would consider partaking in peer assessment exercises in the future as they found it to be a positive experience.

The role of the facilitator is key to the success of the exercise. Facilitators have a responsibility to be aware that students may feel vulnerable about sharing their thoughts and opinions in a group setting. Facilitating a safe, non-judgemental, friendly environment is essential. The management of peer and group communication, possible learning difficulties and vulnerabilities, cultural diversity and so on, is challenging. In this instance, our collective varied teaching experience, as well as our informal collaboration about arising issues, proved invaluable.

Additionally, a clear context and rationale is essential for a good experience. In our view, the terminology used for peer assessment is influential in terms of the quality of and engagement with the exercise. Whilst we provided students with criteria for the 'Peer Edit', as the exercise was called, the term proved misleading. Some students edited their peers' draft whilst others did not as the term, 'peer edit', in our experience, may give the impression that the students' job is to simply copyedit and proofread. As a result, there was an imbalance in the type and scope of the feedback provided. Clearly defining the feedback as 'peer assessment', explaining what that means, and avoiding the terminology 'peer review' or 'peer edit', may clarify the type of feedback required. Rather, 'peer assessment' more accurately describes what we want students to do for this activity. Thus, we recommend that adequate time be allocated to explain the rationale, context and purpose of peer assessment to students, in addition to discussion about criteria, as well as ensuring that students understand key concepts and learning goals (Biggs and Tang 2011).

As a process that is under-utilised in Irish Higher Education, the peer assessment exercise would benefit from more than one iteration. In that way, ongoing feedback from students can be collated to map the impact on their writing as well as on their emotional development, in terms of peer roles, power and status. For teaching staff, recurrent collaboration, as well as regular analysis of student feedback, would help equip facilitators for the challenges of peer assessment exercises. While the idiosyncrasies of group dynamics cannot always be anticipated, the varying demands of the current diverse student body can be somewhat addressed by good preparation, clear instruction, encouragement and a positive, non-judgemental atmosphere. To conclude, there was a strong consensus among the facilitators that

the peer assessment exercise was a valuable learning experience for both student and facilitator and we would advocate for providing the opportunity for students to participate in their own assessment.

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