

Student peer assessment

The purpose of this text is to discuss the benefits of as well as challenges with using student peer assessment as a pedagogical tool in higher education. The article draws on empirical material from my own attempts at implementing student peer assessment in courses where I have been course director and teacher, as well as a review of relevant academic research on the topic.

The article starts with a short overview of what recent academic research has to say on the purpose of and possible benefits of using student peer assessment in higher education, as well as some of the common challenges in its implementation. Thereafter follows a presentation of how student peer assessment was used in a course on research methods at a Linnaeus University (where I was course director) as well as documented student reactions to this pedagogical tool. The benefits and challenges identified are thereafter discussed and analysed in relation to solutions proposed in academic research on peer assessment.

Purpose and benefits of peer assessment

Peer assessment in education is defined as *"an arrangement for learners to consider and specify the level, value, or quality of a product or performance of other equal-status learners"* (Topping, 2009:20-21) or more simply as *"review of work by fellow students in the same course"* (Carnell, 2016:1271). The purposes of using peer assessment in teaching are several, ranging from pedagogical via social to practical.¹ The main focus in the academic literature on peer assessment is its positive effects on students' learning, as well as challenges and opportunities in how to implement peer assessment.

Several authors argue that peer assessment, in particular if it is formative rather than summative, is good for achieving deep learning (Topping, 1998; Lynch et al, 2012; Carnell, 2016) and that it is closely connected to the ability of making self-assessment (Nutly, n.a.; Carnell, 2016).

Deep learning is distinguished from surface learning in that it focuses on understanding of a text or ideas in relation to its context, as a whole, which gives the ability to reorganise knowledge in new forms and in new contexts, as opposed to surface learning's focus on details detached from the whole, which leads to a reductionist way of understanding with limited ability to transfer knowledge to new contexts (Schyberg, 2009; Pettersen, 2008). Another way of expressing this is the often used term 'critical thinking' or Higher-order thinking skills (Hedin, 2006). There are several ways of trying to clarify what is meant with this desirable academic skill. Lynch et al

¹ The focus is here on the pedagogical purposes of peer assessment. The practical reasons include teachers' limited time, where peer assessment offers an opportunity to give each student more feed-back on their work in quantitative terms (Topping, 2009). Learning how to give and receive constructive criticism is also an important social skill that is useful to students in their future professional and personal life (Carnell, 2016).

(2012) are using a version of Bloom's taxonomy in their analysis of degrees of deep learning, where the different levels of learning or cognition are categorised into 1) Knowledge, 2) Comprehension, 3) Application, 4) Analysis, 5) Synthesis, and 6) Evaluation. Another way of explaining the same thing is the SOLO-taxonomy which identifies the following levels of knowledge: Prestructural, Unistructural, Multistructural, Relational and Extended Abstract (Hedin 2006).

It is argued that peer assessment as well as self-assessment helps the students to understand what quality is in an academic sense and how they can improve their own work to achieve this level (Sadler, 2002; Lynch et al, 2012). Peer assessment is seen as a way to improve self-assessment (Reinholz, 2016; Nulty, n.a.), which in turn improves the quality of the work and promotes deep learning. These forms of teaching are also seen to improve students' autonomy and critical thinking (Carnell, 2016).

Peer assessment is a good teaching practice in relation to student centred learning, i.e. the teaching philosophy which posits that students need to take an active role in their education to achieve deep learning, as it gives the students an opportunity to be active participants rather than passive recipients in feed-back processes (Carnell, 2016).

Peer assessment can be organised in many different ways. It can be summative (i.e. giving a mark or grade) or formative (i.e. with the purpose of improving the work, not grading it) or both, although most research points to formative assessment as more conducive to deep learning (Lynch et al 2012). It can be combined with teacher assessment or stand alone, compulsory or voluntarily, anonymous or non-anonymous, written or oral or both, involve two or more students, be one-way or reciprocal or mutual and involve students with similar or dissimilar abilities and experiences (van den Berg et al 2006; Topping, 2009). Instead of reviewing the various designs found in the literature, I will focus on the main challenges this literature identifies in implementation of peer assessment.

Challenges in implementation: Overcoming students' hesitation

Several studies of peer assessment identify the students' hesitation to criticise each other's work and/or their distrust in each other's ability to make proper judgements as a challenge (Lynch et al, 2012; Carvalho, 2013; Lladó et al, 2014).² Lynch et al (2012) even term this as the greatest challenge in peer assessment. Peer assessment challenges the often dominating role of the teacher as expert in education, and it takes time for the students to adjust to this change in expectations on roles (Lynch et al, 2012; Cornell, 2016). It is closely connected to the more general change in teaching philosophy from teacher centred to student centred learning, or as Schyberg (2009) suggests: learning-centred learning, where students and teachers meet in the course content. In order for this to work the course content and the instructions to the students has to be very clear, for them to be able to engage in their own learning process rather than wait for the teacher's expert assessment.

² Furthermore, there are studies indicating that power dynamics and social relations within student groups also have a big influence on peer assessment implementation, and is one of the reasons why summative peer assessments are discouraged (Patton, 2012).

It is often argued that academic thinking and practice involves tacit knowledge to a large extent that is acquired through practice and through dialogue (Fritzén, 2009). Writing and presenting and getting feed-back on written text and presentations from peers is an essential part of how we acquire this knowledge as professional academics, in seminars and conferences and through peer review of publications, etc. Peer assessment can be seen as a way of introducing this way of learning to students. The question is how to do it, i.e. how to design peer assessments for students that fosters deep learning, critical thinking and helps them overcome any resistance toward moving from teacher-centred to student- or learning-centred learning.

A recurring theme in literature on peer assessment is the importance of clear communication of the assessment criteria that the students are going to use when they assess each other's work (Topping, 2009; van den Berg et al, 2006; Yucel et al, 2014). Both Topping (2009) and Nulty (n.a.) also recommend involving the students in developing the assessment criteria, in order to ensure that they understand the criteria clearly. It is important to recognise that understanding quality of academic work is a complex task that takes time to learn (Sadler, 2002) and that providing effective feed-back is an even more complex task (Topping, 2006). Obviously the complexity differs depending on the type of course and assignments. In some cases there might be definitive answers to problems or questions, but in most academic studies, in particular in social science and art, the criteria for what constitutes quality is less straightforward and often difficult for students to comprehend and also difficult for teachers to communicate.

The challenge is not only to formulate clear criteria for how to assess quality in academic writing but also how to help the students understand the criteria and use them to assess both the texts of their peers and their own texts (as that is one of the purposes of peer assessment). Several authors (Sadler, 2002, Topping, 2009; Cornell, 2016) argue that the students need training in seeing quality in order to understand what it is, and that this can be done by using examples of texts of different quality, such as previous students' (anonymous) texts.

Implementing peer assessment in a course on research methods

Elements of peer assessment are often used in higher education without explicitly being referred to as peer assessment. For example, students are often required to read and comment on written assignments or presentations by their peers, in particular in connection to seminars or final presentations. In my own teaching practice I have gradually come to use peer assessment more and more consciously, more explicitly referring to it as peer assessment. My main reasons for increasing the use of peer assessment has been to 1) increase the amount of feed-back given to students 2) increase student engagement in the course work 3) shifting from a teacher centred to a student centred educational practice. Hence, the motivations range from practical to pedagogical.

I will describe these practices in more detail with regard to one course in Research Methods for third-year undergraduate students in Peace and Development Studies at Linnaeus University in Växjö, a course which I gave as a main teacher three times.³ In this course the students were given weekly written assignments throughout the course, which were subjected to peer

³ I have used peer assessment in similar ways in other courses that I have taught at University of Gothenburg, but I decided to focus on one course here as an example. I chose this particular course in Research Methods because I had, in particular from the last time I gave the course, ample material to draw from in the form of log books from students and course evaluations that explicitly addressed the peer assessment elements of the course.

assessment (complemented with teacher feed-back) and discussed in a seminar every week. The weekly assignments and seminars as well as complementing lectures were used as a way to build up to the final examination assignment.

The final assignment that the course was building up to was a PM for a Bachelor/Master thesis which the students developed step by step during five weeks. Each week a new aspect of the thesis PM was introduced in lectures, followed by an assignment where they developed that aspect of the PM (research topic, choice and use of theory and concepts; choice of method; preliminary PM). Each week's assignment constituted a draft of one part of the PM and was subject to both student and teacher assessment. A full draft of the thesis PM was presented at a final seminar which was held two days before submission of the PM, thus making also the final draft subject to both student and teacher formative assessment. The third (and last) time I gave the course (in the spring semester 2014), I also requested the students, in addition to producing the PM in its various draft forms, to document the progress of the peer assessment work both in individual log books that were submitted by the end of the course, as well as group reports to the teacher after each seminar. The empirical material used in the analysis below is based primarily on the course evaluations, log books and group reports from this third time I gave this course. It consists of both written (anonymous) and oral (in full class) course evaluations, 13 individual student log books of the PM writing and peer assessment process and eight group reports from peer assessment seminars.⁴

Overall, according to the course evaluations, the students liked the structure of the course including the peer assessment elements in principle, but (and in line with literature reviewed above) they found it challenging to comment on each other's work. They were not used to taking that role in relation to each other, and thought that they did not have the right or competence to comment on each other's work at that stage in the process. Some students requested more teacher involvement and feed-back, as formulated in the following quote from the written course evaluation:

"I feel that the group seminars haven't really helped. I would rather have seen that we would be given chance to talk to our tutor who has lots more knowledge and experiences."

Other students thought the problem was that they had not been trained in giving critique, as formulated by one student in the oral course evaluation:

"The students are not used to giving critique. They are too nice, which means that the seminars do not really become useful. This is a critique against the whole program - we should have more training in giving critique earlier, more seminars, etc."

Nevertheless, many of the students still managed to give meaningful feed-back to each other. The group reports and log books show a wide range of depth of involvement of the students, where some students' log books were short and superficial in content, while other described clearly which comments they got from their peers and how they handled these comments.

Many of the comments from the peers were similar to those often given by teachers at an early stage of developing a thesis topic, such as issues of clarification, delimitation, motivation of

⁴ There should have been 15 student log books, but two students did not submit, and there should have been 16 group reports (four groups with four seminars each), but one group did not submit any reports, and two of the groups only submitted reports from some seminars.

choices and tips of other literature. The two excerpts below from the log books of two different students:

"The feedback that I got was that I need to motivate my choices of material, theory and method, which I realised I had not done that well. So I changed that right away and for now I think that I have motivated my choices well enough for everyone to follow my train of thought. Another thing that my group members commented on was the fact that my theory chapter was not developed. They felt like I had to explain better why the theories I have chosen was relevant for my study and how I was planning on using them. I agreed to their comments and added a few things to the theory chapter." (log book, student 5)

"Angela brought up the idea of triangulation regarding my theories. I would still use them in the same way, but now I could put a "name" on the method of using. She brought also up Mikkelsen's theory book as a guiding tool in the process. After the meeting I went to the library and copied the pages which I thought I was going to need regard interviews and triangulation." (log book, student 4)

Not only did the student appear to give meaningful comments on each other's drafts, but these comments were also in many cases accepted by the students.

"I have found this part [i.e. method] very difficult in writing my PM but with the help from the others I ultimately decided to do an abductive study using an analytical framework." (log book, student 7)

Sometimes the comments from peers did not lead to changes in the PM design or content, but rather to clarifications of choices made.

"There was critique regarding my choice of theory and also that they think that I have to use more data than the book. I think that I was not clear in my text about how I will use the book and I will reverse my text so that it will be easier to understand. I will stick to the plan of using RC theory since I think it fits good, but I will explain my motivations better." (log book, student 11)

Some students also expressed that confirmation and feed-back from their peers had made them more confident in their work. This is illustrated by the following excerpts from one student's log book, which clearly shows the journey from insecurity to confidence and the role of the peer seminars in this transformation.

"I feel very lost and it is really disturbing me that we have no time to talk with a coach/tutor." (log book, student 10, after the first peer seminar)

"The group thinks I have detected something interesting but that I, which I am highly aware of, need to pinpoint my problem so that I know what information and previous research I have to look for." (log book, student 10, after second peer seminar)

"I feel very comfortable as well as confident in continuing on my previous research on human trafficking. After attending the PM seminar... it felt like my classmates confirmed my feelings. Can't wait to get started with the writing!!!" (log book, student 10, after the last seminar)

The log books of the students clearly show that the peer seminars were useful in their writing and thinking process, in particular with regard to encouragement and with regard to initial clarification of content.

However, in some cases the peer were not able to help, either because of lack of knowledge/understanding or because of lack of commitment, as shown in these two excerpts from log books.

"...the analytical framework was still abstract for me. We discussed it for a while and it only confused me more since all had their versions of an analytical framework. I have an idea in my head now how the framework works, but I am still unsecure." (log book, student 4)

"I was a little annoyed that another group member had not taken the task seriously and had no criticism to give any of the reset, yet received good feedback from the rest of the group. Other than that, it was very helpful since we all had different difficulties and were able to see our own mistakes by reading each other's PMs." (log book, student 9)

In some cases the insecurity and reliance on the teacher was also clearly expressed, as in this example:

"During the seminar I raised issues concerning whether the group though the problem and purpose statement and the structure as a whole was regarded good. According to the group this is the case. Further, issues I raised was whether I was in the pragmatic or transformative academic tradition (I do not grasp how clear we have to state such intentions!), and the group could not contribute in making this any clearer. I will leave this part now for input from supervisor later on... " (log book, student 2)

In several cases the log books also documented the complicated relation between peer and teacher assessment. One student writes about a discussion they had in the group about her use of theory, just to be followed by the sentence: *"We also got a visit from our teacher who had some comments on our thesis topics. Regarding my topic I was told to rethink my idea..." (log book, student 3)*. Obviously, such an intervention can serve to delegitimise the peer assessment and makes it even harder for the student to take it seriously.

In sum, the students' experiences of peer assessment in this particular course points to the usefulness of peer assessment in at least two respects:

- 1) for encouragement for self-doubting students,
- 2) for taking on a similar role as a teacher in the early stages of formulation of a research project/text, i.e. with regard to clarification of ideas and text.

However, the students' expressed experiences also points to the need for being cautious about the respective roles of the teacher and peers in giving feed-back. The peer assessment cannot replace the teacher's feed-back, but can be a first step in a feed-back process, after which the teacher can come in with further clarification and more authority and knowledge. There seems also to be a need for clear communication with regard to the expectations on the teacher versus peers, in order to avoid uncertainty and confusion, and to help overcome the student's possible reluctance against trusting each other's judgement. However, as the students' log books show,

they were also quite willing to take on comments from their peers, so this reluctance should perhaps not be over-emphasised.

How to understand quality in academic texts

The literature reviewed above pointed to the challenge for the students to understand what quality is in academic texts and the importance of clearly communicating the assessment criteria to be used in the peer assessment. The insecurities expressed by some of the students in the log books also testify to this challenge, and the assessment criteria used will therefore be discussed here.

The criteria used in the weekly peer assessments of draft thesis PMs were the same as those used by the teacher for the final PM. These criteria were also the same as those used for the full Bachelor/Master thesis, i.e. the criteria we as teachers were to use both in supervision and examination of the full thesis. Hence, these criteria were general standards against which the quality of academic work is measured. They were formulated as follows:

- Clarity and delimitation of research problem, purpose and research questions
- Relevance and significance of the proposed study in relation to previous research and in relation to Peace and Development Studies
- Choice and use of theory and concepts in relation to defined research problem and purpose
- Choice and use of method in relation to defined research problem and purpose
- The logic throughout the PM - fit between research problem, purpose, research questions, use of theory and method

When looking at these criteria from a student perspective it becomes apparent that they leave much to desire when it comes to clarity and require a lot of tacit knowledge of what constitutes academic quality. For example: When is a research problem sufficiently clear and delimited? Even though all the aspects of the PM, academic writing and criteria were discussed in lectures and in the course literature, it is still understandable that the students could feel insecure in making judgements with regard to what constitutes quality in relation to these criteria.

Sadler's (2002) case text on how he worked to make students aware of assessment criteria and quality includes many illustrative examples. Firstly, he also ran into the same problem as me, in that he realised, upon closer reflection, that the criteria he used were ambiguous, even to himself. The criteria he used were: relevance, comprehensiveness, coherence, logical reasoning, and presentation. Secondly, (and in spite of this ambiguity) he describes how one of his students came to understand the criteria after having read two examples of other students' assignments that was regarded by himself as exhibiting particularly high quality. It is very interesting to note that this student, who had initially questioned his assessment of her own assignment, had no further questions after having read the two high quality assessments, but said that she fully understood the difference between her own and the other students' assignments. This leads Sadler to conclude that "*...quality has to be recognized rather than defined.... The only way to recognize something is to 'experience' it in some way*" (Sadler, 2002:135). His recommendation is therefore to use peer assessment, but to combine it with exposing students to a range of works, preferable authentic and coming from other students, that display different levels of quality. Only then are the students given a fair chance at developing the skills of recognising quality in

academic work, and thereby being able to make useful assessments of both their own and their peers' work.

Conclusion and lessons learned

Peer assessment can be, as reviewed in this article, both a useful and challenging method for achieving deep learning in education. The benefits seen in the discussed case, where peer assessment was used in the process of students developing their thesis PM in a research method course, were that

1. the students were able to give each other similar feed-back that teachers often give in the beginning of a writing process, i.e. concerning clarification of ideas and text
2. students were able to encourage each other in overcoming insecurity in the thinking and writing process

This means that peer assessment to some extent can fill the same function as teacher's feed-back in the early stage of a writing process and thereby give each student more feed-back in quantitative terms than the teacher is normally able to give due to time-constraints.

It is also a teaching practice that forces us as teachers to be self-reflective and self-critical with regard to what we teach, how we assess, what we want to achieve, and not the least what is regarded as quality in academic writing. I therefore believe it is a worthwhile exercise for both students and teachers to become more learning-centred.

The lessons learned from this article that I will bring to my own teaching practice next time I implement peer assessment are the importance of:

- clarifying the expectations on student peer assessment versus the role of the teacher
- devoting time to discussing what quality is in academic writing, by using examples of previous students (anonymised) texts in order to illustrate different levels of quality

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