Putting a social-constructivist assessment process model into practice: building the feedback loop into the assessment process through peer-review.

Margaret Price, Berry O'Donovan and Chris Rust

Oxford Brookes University

SUMMARY

This paper reports the latest stage of a research project focussed on developing students' understanding of assessment criteria, the assessment process, and assessment standards. It explains the theory of a social-constructivist assessment process model and details one particular module where the authors have tried to put it into practice. In particular, it focuses on attempts to actively engage the students with feedback on their work, and the feedback process, and considers the evidence of whether it has been effective.

INTRODUCTION

It is generally accepted in the research literature that assessment is probably the single most powerful influence on student learning behaviour (e.g. Ramsden, 1992; Gibbs, 1992; Brown et al, 1997; Rust, 2002) but that current practice frequently not only fails to capitalise on this, but is actually deficient in many ways (e.g. Gibbs, 1992; Angelo, 1996; Knight, 2002a, 2002b; Race, 2003). This paper reports the latest stage of an on-going research project in the Business School at Oxford Brookes University to find ways of improving practice. The thinking behind the project is based on a social constructivist view of learning (Vygotsky, 1962, 1978; Bruner, 1986, 1990) which

argues that knowledge is shaped and evolves through increasing participation within different communities of practice (Scribner, 1985; Cole, 1990; Wenger, 1998) and that for students to truly understand the requirements of the assessment process, and the criteria and standards being applied, they need tacit as well as explicit knowledge (O'Donovan et al, 2004). Based on experiences and the research literature, the research team has developed a social constructivist assessment process model (Rust et al, 2005) and this paper describes an attempt to put this model into practice. It focuses especially on findings arising from attempts to build a feedback loop into the process.

THE STORY SO FAR

The genesis of the project was an attempt to both ensure consistent standards between markers and provide students with explicit guidance on what was expected of them through the development of a Field-wide[1] set of criteria and standards in the form of a two-dimensional assessment grid (Price & Rust, 1999) Further research (O'Donovan et al, 2001) into the use of the grid was then carried out to identify how the students experienced it. The second phase of the project focussed on how to provide students with a better understanding of what is required of them and what the criteria actually mean through an intervention centred around a 90 minute assessment workshop using exemplar assignments, marking practice and discussion thereby enabling the sharing of tacit knowledge to augment the explicit assessment grid. (Rust et al, 2003

The next phase of the project was to turn our attention within the assessment process to the issue of feedback. The research literature is clear that within the assessment

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process, feedback is potentially the most important and powerful part with regard to affecting future student learning (Hattie, 1987; Black & Wiliam, 1998; Gibbs & Simpson, 2002). But there is also considerable research evidence that feedback processes frequently fail. Feedback is not understood (Lea & Street, 1998); and is not found to be useful (Maclellan, 2001). Additional findings are not surprising in the light of such studies i.e. that feedback is often not even read (Hounsell, 1987); that it has no effect (Fritz et al, 2000); and it can even be harmful to the student's 'self-efficacy' (Wotjas, 1998).

Based on the success and model of the assessment workshop, we decided to introduce a feedback workshop after the assignments had been returned, at which the students would be helped to actively engage with the feedback they had received. This had the double intention of ensuring the students read and worked with the feedback, and introducing a model for them for processing future feedback. A template was devised, and students who attended the workshop completed the template having read their feedback and discussed it in pairs and small groups, as well as some plenary discussion with tutors. The intention was to follow these students up and see if their subsequent work improved in the same way as with the assessment workshop intervention. Unfortunately, this was to prove problematic, largely because a relatively small number (116, 22%) chose to attend the feedback workshop. We had already anticipated difficulties in distinguishing between the possible effect of the feedback workshop compared with the marking workshop because the subsets involved would provide less statistically robust figures, but these numbers made it impossible to even contemplate. The only evidence we were able to gather was the

[1] At Oxford Brookes a Field is an identified collection of modules in a given subject discipline from

almost exclusively positive perceptions of those who attended the workshop, and their belief that it had been useful. The process and the comments of the students did also confirm the various negative findings of the research literature i.e. that feedback was frequently not understood and/or not found to be useful. When this intervention, and the problems of knowing how to proceed with this project, were presented in a research seminar at the 2003 Improving Student Learning conference, some very useful suggestions were made which inspired the research team to make some significant changes and to try again.

APPLYING A SOCIAL CONSTRUCTIVIST ASSESSMENT PROCESS MODEL TO ONE MODULE

The social constructivist process model (Rust et al, 2005) argues that students should be actively engaged with every stage of the assessment process in order that they truly understand the requirements of the process, and the criteria and standards being applied, and should subsequently produce better work. Our application of this model has the following features:

1. An explicit assessment grid with defined grade definitions for each criterion.
2. A voluntary workshop on report writing in weeks 5/6 (term 1), which focuses on two of the basic criteria – presentation and structure.
3. A lecture followed by a seminar in week 6 (term 1) which focuses on a business problem similar to the problem in the coursework assignment.
4. A voluntary assessment workshop (as described above) in weeks 7/8 (term 2), which especially focuses on the criteria of analysis and evaluation.

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which a student may acceptably select a programme, according to certain rules.

5. Anytime before week 10 (term 1), a compulsory course requirement is to undertake an on-line 'information sourcing' course, which takes students to sources useful for the coursework assignment.
6. A voluntary peer-review workshop (described below) in week 2 (term 2).
7. Submission of an assignment in week 3 (term 2) with a "reward" of 3 marks (out of 100) for students attaching the peer-review form from the peer-review workshop. The peer-review form includes an optional section for comment on how they have reacted to the review.

THE PEER-REVIEW WORKSHOP

The really useful idea given to us at the ISL conference was that if we have logistical problems getting the students together for a feedback workshop after the marking of the assignment why not include the feedback process within the course, prior to the marking? So this is what we have done: created a voluntary peer-review session one week before the submission date that students may only attend if they bring with them a completed piece of coursework. We conjectured that engaging in the peer review review process would build upon students' incipient understanding of marking criteria and standards initiated through their previous participation in the assessment workshop. And that this understanding would then flow through to an informal self-assessment of their own work which would be a necessary part of their redrafting process before final submission of their assignment one week later.

However, given the extensive research literature about student instrumentality, in order to motivate them to take part and make the effort to complete their work one

week earlier than the deadline, 3 extra marks (out of 100) are given to anyone who attends the workshop and attaches the peer-review form to their work on submission. This was considered to be the smallest mark that would provide sufficient incentive while having a relatively insignificant effect on the final mark

At the workshop, students were put into triads. Each triad had 40 minutes to read one other member of their triad's work, and to make written comments on it, guided by the peer review checklist and recording their comments on the peer review form. Apart from logistical reasons, this fairly limited amount of time was deliberate as it was a concern that if more time was provided some students might find ways of copying detailed aspects of their peer's work. They then had 15 minutes each (i.e. 3x15 minutes) to give and discuss that feedback. During the discussion round, the third member of the triad was encouraged to listen and contribute too. The peer review checklist was given to the students one week before the workshop in order to familiarise themselves with it. It was however also suggested that they might use it to self-review to support the preparation of their own work.

METHOD

The effectiveness of the peer review workshop will be judged on an analysis of four sets of data:

1. The student statements on the peer review form regarding what they did in the light of the review comments they received.

2. Student evaluation of the process, gathered by questionnaire. 3. The quality of the work produced by those who attended the workshop compared with those who did

not.The views of a focus group from the course team of tutors, subsequently checked for accuracy with the other tutors.

The value of using both qualitative and quantitative methods and methodological triangulation in educational research has been recognised by many social researchers (e.g. Bryman, 1988; Layder, 1998; Cohen et al, 2000; Hartley & Chesworth, 2000). There were also pragmatic reasons about data which was more readily available and/or easy to collect.

RESULTS**Student statements on the peer review form**

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503 (84.7%) students chose to attend the peer review workshop, and 478 peer-review sheets were submitted. Analysis of their comments on what they did in the light of the review comments they received identified a range of four types of response (although 26% gave no response at all).

Fully accepted the advice	Partly accepted the advice	Rejected the advice /advice not helpful - but gained added insight as a result of reading others	Rejected the advice	No response provided	Unclear/not able to classify
236 (49%)	92 (19%)	4 (<1%)	5 (>1%)	124 (26%)	17 (4%)

Student evaluation questionnaire

The end–of-course questionnaire included questions specific to the peer review process . This questionnaire was completed after a review lecture with half (297) of the cohort (the cohort is taught in two halves because of its size) For logistical reasons it was not possible to do it with the other half, but each half should be an equally representative cross-section. 297 questionnaires were returned, 271 were usable, but 60 respondents of those failed to turn over and locate the questions specific to peer review, leaving 211 responses .

The results overall were very positive:

- 66.3% found the workshop useful or very useful
- 69.7% found the peer-review checklist useful or very useful in guiding them in reviewing the work of their peer
- 67.8% found the peer-review checklist useful or very useful in guiding them in reviewing their own work
- 71% found it useful or very useful to read another's work
- 61.6% found the comments of their peer-reviewer useful or very useful
- 55.9% made some or a lot of changes based on the comments of their peer-reviewer

The quality of the work produced by those who attended the workshop compared with those who did not

The 503 students (84.7%) who attended the peer-review workshop achieved an average mark of 53.9%. 91 students (15.3%) did not attend the workshop and 22 of those also failed to submit an assignment. The 69 (11.6%) who did submit an

assignment achieved an average mark of 49.3%. However, it must be noted that those who attended the workshop received three marks for completing the peer review sheet. If this is deducted, the 'true' comparison of average marks between the two groups is 50.9%:49.3%. The standard deviations for the two sets of figures were almost identical (11.3% for participants and 11.5% for non-participants) as were graph plots of the two sets of results suggesting there was no significant difference between the two groups. To carry out a baseline comparison between the two groups that would have been statistically significant was unfortunately not possible because of the Brookes' modular system and the comparatively small number of non-attenders who submitted.

Course team focus group

A sixty-minute focus group discussion was held with four (randomly selected by availability) of the course team tutors (one third of the total) and there was a high level of agreement in their responses. The summary of their responses (see below) was circulated both to the four focus group members, to verify for accuracy, and to the other course tutors, to check if the views were representative. The summary was judged to be accurate, and the non-attenders did confirm that it represented their thinking too. However, confidence as to the significance of this high degree of agreement needs to take account of the impact of time pressures of marking the work. Tutors had apparently only read closely a small sample of the peer review sheets, and their choice of which to read may have been skewed in favour of papers where there was some problem in marking the work.

The course team focus group offered the following views: About the impact on the students:

- Disappointment that the general standard of the final work submitted was not better as a result of the intervention.
- Inability to make comparisons between the results of this cohort with those of the previous year for a variety of reasons.
- Identification that there was a wide range, both in the degree of engagement by the students in the exercise, and the quality of the feedback written on the peer review forms. There was some speculation that this may have related to ability and/or the student's origin (there being a high number of international and EU students on this module - 40% approx. international/EU students, with 67 nationalities represented) and possible language difficulties and cultural issues.
- It was acknowledged that some of the feedback provided by the students was of high quality and very accurate, but even so it was not always acted on.
- It was pointed out that the quality of the conversation in some cases was what was valuable and may not always have been reflected in what was written on the peer review form.
- An unintended benefit in getting them to complete the first draft a week early and not leaving it all to the last minute.

About the impact on the tutors:

- The idea that the process could save marking time by being able to refer to accurate peer feedback comments rather than writing them again (which had been thought might be a possible beneficial bi-product) was rejected. Reading the peer comments was seen as more time consuming.

About the review process:

- Whether the time for the peer review process was sufficient was questioned.
- Whether more training should be provided in how to "constructively criticise" was raised.
- It was suggested that some students seeing a poor piece of work, or being told theirs is good by an easily impressed weak student, might have got a wrongly inflated view of the quality of their own.
- It was suggested that a good student paired with a weak student might get nothing out of the process.

Overall:

- Despite some of these concerns, it was considered to be "a really useful exercise… getting students to think about criteria and how they are being assessed." "Seeing someone else's work may open their eyes." It was also considered that the benefits might be more long term and help in subsequent modules if not in this one.

DISCUSSION

If we look only at the statistics regarding the average final marks achieved, it would be easy to be disappointed by the negligible (1.6%)'real' difference and to assume this shows that the peer review workshop has had no effect. Some of the comments of the tutor focus group are also disappointing concerning the apparent lack of engagement

and/or ability to engage in giving feedback. We might single out for special disappointment, the finding that some students, given sound advice (in the view of the tutors), did not apparently act upon it.

But interestingly, despite these findings, both students and tutors overwhelmingly viewed the process as useful. The tutors, without exception, believed it was a beneficial process and a majority of the students rated each aspect of the process useful – the workshop, the checklist, reading another's work, etc. So is this just wishful thinking or is it possible to interpret these results more positively? There are perhaps three possible ways of doing so: if the non-attending group was not typical, the possibility that the beneficial impact was deferred to the next piece of work, or that the high number of international students has in some way distorted the outcome.

If we start by considering the non-attenders, the 69 who did not attend, but submitted, are quite a small number (compared with the total cohort) which brings their statistical validity into question. It is possible, for example, that non-attenders may contain a significant number of confident, able and competitive students who did not want to share their work with others. It is also possible that even though they did not attend the workshop they may still have made use of the peer review checklist and used it to review, and subsequently improve, their own work. Another possibility is that more of the very weak students attended the workshop in the hope it would help them, and it did, and the average mark for those comprising the attenders would actually have been lower if the workshop had not happened. Another possible factor (admitted by at least one of the tutors) is that because the students who attended the review workshop had received three extra marks the tutor has marked their work more

harshly, especially if the addition of such marks pushed the final mark into a higher grade category. It is also clear from the tutors' expressions of disappointment that knowing the module had all the supporting interventions identified above, they had higher expectations and therefore may have generally marked more harshly. However, it is actually very hard to see how any of these arguments could be successfully sustained given the fact that the standard deviations for the two sets of results (attenders and non-attenders) were almost identical (11.3% for participants and 11.5% for non-participants) as were graph plots of the two sets of results, which strongly suggests there was no significant difference between the two groups.

A second, and perhaps more plausible, theory is that there was an impact but for a variety of reasons it was not applied sufficiently to make a significant improvement to this piece of work.The fact that, according to the tutors, students apparently did not always act upon sound feedback advice does not necessarily mean that they did not hear or understand it. It may be that they decided that although it could be improved, their work was good enough and they chose not to expend further effort on extra work, in the relatively short timeframe of a week. A decision to go for "good enough" might have been swayed by marks from the first year having no subsequent bearing on the student' s final degree classification. Extra work in this context might have no obvious benefit.

A contrary line of argument rests on noting that a majority of the students (55.9%) do in fact claim to have made some changes as a result of the feedback they received. However, again it may be that changes claimed were relatively simple, and easy, requiring little time or effort, but also making little significant impact. One is tempted

to draw parallels with an author's natural response to referees comments on a paper. Minor modifications, inclusions and improvements are welcomed and adopted readily. Suggestions that major new areas might be opened up for consideration are strongly resisted if possible because it will almost certainly require significant rewriting and restructuring of the whole paper, especially if the general reaction to the paper is positive. And if one had a limited time frame, such as a week, this response is even more likely.

For all these reasons, it could be argued that no apparent benefit after a week does not necessarily mean that there will not be a longer term benefit which might be seen in future work. It may also be that a single intervention of this kind lacks sufficient impact, for at least some of the students. It may need further reinforcement with similar activities in subsequent modules although we remain hopeful that at least some of the students, seeing the benefit, will also start using self and peer-assessment on their own initiative.

A third possible factor, that we cannot ignore, is the very high number of international and EU students involved. We need more information as to whether language and/or cultural background may have prevented some students from fully benefiting from the process themselves and/or from helping others. This links to the more general question of whether more guidance and training of some kind is needed for the students in how to give critical feedback, and also whether more time was needed in the workshop.

We find most encouragement from the results of the student evaluation questionnaire which do seem to support the theory behind our social constructivist assessment process model. The theory argues that it is in the process of assessing the other's work, and giving feedback on it where the student learns and increases their understanding most, rather than in the receiving of feedback. In the student evaluation questionnaire, although a significant majority have positively responded to all aspects of the process, it is interesting to note that the highest scores for benefit arose from reading another's work; the lowest benefits were linked to usefulness of the peer's feedback. The already low value on peer feedback seems discounted further by the number who then made subsequent changes. This lower number may be explained by the fact that the feedback may have been largely positive and suggested no changes.

CONCLUSION

Despite an attempt to implement what the literature leads us to believe to be a model of best practice, soundly underpinned by theory, we have totally failed to demonstrate any tangible improvement as a result of our peer review intervention in terms of student marks or assessors' confidence in the efficacy of the intervention to improve performance. However, both students and assessors evaluate the intervention positively with both believing it to be beneficial. Possible explanations that the non-attenders were in some way untypical seem unlikely. A somewhat more sustainable explanation might be that the intervention has been beneficial, and the lack of evident improvement is due to the students taking a strategic and instrumental approach, and being prepared to settle for 'good enough' this time. But we have no evidence to

support this interpretation. A third explanation might be found in the very high number of international and EU students involved. A fourth explanation might be that the intervention was just managed badly.

The only evidence, however, disappointingly leads to the conclusion that the intervention did not work, despite the fact that the literature suggests it should. More research is clearly needed to explain why. We would welcome correspondence with anyone engaged in similar work, and the possibility of collaboration on such research.

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BIOGRAPHICAL NOTE

Margaret Price holds a National Teaching Fellowship with a project focusing on the development of assessment strategies. She is also a Brookes University Teaching Fellow and a Principal Lecturer in Management in the Business School. She has researched and published on a range of issues related to peer assisted learning, motivation to learn and assessment processes and standards, and is a registered practitioner with the Higher Education Academy.

Berry O'Donovan is a Brookes University Teaching Fellow and a Principal Lecturer (Learning and Teaching) in the Business School. Her research interests over the past

few years have focused on knowledge transfer processes, both within higher education and commercial organisations. She is a registered practitioner with the Higher Education Academy.

Chris Rust is Head of the Oxford Centre for Staff and Learning Development and Deputy Director of the Human Resource Directorate at Oxford Brookes University. He has researched and published on a range of issues including: the experiences of new teachers in HE, the positive effects of supplemental instruction, ways of diversifying assessment, and the effectiveness of workshops as a method of staff development. He is a Fellow of SEDA (Staff and Educational Development Association) and a registered practitioner, and accreditor for the Higher Education Academy.

Address for correspondence

Margaret Price, Oxford Brookes Business School, Oxford Brookes University, Wheatley Campus, Wheatley, Oxford, OX33 1HX, UK

Tel: (0)1865 485944

Fax: (0)1865 485830

e-mail: meprice@brookes.ac.uk