

Embedding Benefits Final Report Template

This template has been designed for projects within the Embedding Benefits Programme. Please note that text in blue italics is explanatory and should be deleted in completed documents.

Project Information			
Project Title	PEER Toolkit		
Start Date	1 May 2012	End Date	31 April 2013
Project URL/Blog URL	http://www.reap.ac.uk/PEERToolkit.aspx		
Design Studio URL			
Lead Institution	University of Strathclyde		
Project Lead Contact Name	Catherine Milligan and David Nicol		
Contact Email address	c.milligan@strath.ac.uk and d.j.nicol@strath.ac.uk		
Programme Name	Embedding Benefits	Category	
Programme Manager	David Kernohan		

1. Summary

The outputs of the PEER Toolkit project are a set of principles of good peer review practice based on a synthesis of current research and a 'how-to-guide' for those wishing to implement peer review in a classroom, department or across a whole institution. The PEER Toolkit web pages constitute the guide. Other project outputs are case examples of peer review practice across a range of disciplines, two journal publications that give new insights into the educational benefits of having students produce reviews and a briefing paper for senior managers. The PEER Toolkit project has also created a set of workshop resources, based on the peer review principles, to support academics as they design or redesign peer review activities for students. Numerous workshops and conference presentations have been made on this topic during the life of this project.

2. What resource(s) did you package/collate/disseminate for use by other institutions?

Available Resources

The PEER Toolkit project produced the following:

- **A 'how-to-guide'**: a set of structured web pages for those wishing to implement peer review supported by software. This guide includes information about how to introduce peer review to students, about the design decisions that need to be made in implementing peer review with over 11 case examples of implementation across a range of disciplinary contexts and advice on software use to support peer review with large numbers of students. Some of these examples are updates on those produced for the earlier PEER project.
[\[http://www.reap.ac.uk/PEERToolkit.aspx\]](http://www.reap.ac.uk/PEERToolkit.aspx)
- **Case examples**: collated examples from multiple disciplines and institutions including summary descriptions of the implementation and evaluation data.
[\[http://www.reap.ac.uk/PEERToolkit/Examples.aspx\]](http://www.reap.ac.uk/PEERToolkit/Examples.aspx). The following is a list of the case examples:

1. Sociology – first year – University of Strathclyde: peer review to improve students ability to produce posters in sociology.
2. Design Engineering – first year – University of Strathclyde: peer review in engineering product design; this implementation also involved students' self-review their own work. A journal article based on this case study has been published in *Assessment and Evaluation in Higher Education* (2013)
3. Teaching and Learning Online – postgrad/academic staff – University of Strathclyde: This is a course for academic staff in the University.
4. Psychology: Critical Peer Review – third year – University of Glasgow - this example provides detailed advice about how to motivate students to participate in peer review activities (awaiting approval).
5. Biochemistry - third year – University of Strathclyde: an innovative approach to peer review that involves students using teacher-provided feedback resources to scaffold their peer review activities. Findings suggest that students not only benefit from producing reviews but they also engaged deeply with the teacher-feedback resources.
6. Civil and Environmental Engineering – level 2 - University of Strathclyde: statistics and model analysis - peer review in a quantitative discipline (awaiting approval)
7. Civil and Environmental Engineering – a departmental example of peer review in preparation for the Research Excellence Framework – academic staff reviewed the submissions of their peers to the REF (awaiting approval)
8. Computing Science: Distributed Information Management – level 3 and masters – University of Glasgow
9. Business School: Corporate Entrepreneurship – level 4 – University of Glasgow
10. Veterinary Biomolecular Sciences – 1st and 2nd year – University of Glasgow
11. Computing Science: Professional skills and issues – level 4 – University of Glasgow

The software used to support the peer review is described within the context of the case studies on the website.

- **Principles of good practice in peer review:** including examples of implementation. These principles were derived from a detailed analysis and synthesis of the research literature, including research conducted by the PEER Toolkit project team. The peer review principles draw on the methodology for 'principle construction' outlined in the REAP project <http://www.reap.ac.uk/TheoryPractice/Principles.aspx>. One value of principles is that that they provide a checklist to support the operationalisation of peer review practice in a research-informed way. In other words, principles make the key research ideas on peer review easily accessible to busy academics, without their having to read, analyse and translate the vast literature base relating to this topic into ideas for practice. Secondly, the principles provide a language for discussing and sharing good practice. Thirdly, as illustrated next, the principles with brief examples can be used as tools to run design workshops on peer review.
- **A set of workshop resources:** created to support teacher-practitioners design or redesign peer review implementations in collaboration with others. These resources comprise a set of artefacts/ cards based on the principles of good peer review practice discussed above. Each card has a principle of peer review on one side and a range of examples of implementation on the other. Nine principles have been developed, refined and tested in workshops. The principles/artefacts can be used in conjunction with the course timeline artefact developed through the JISC-funded Viewpoints project at the University of Ulster, although they can be used in more informal ways as well. Indeed, the PEER Toolkit workshop resources add to and supplement the Viewpoints resources, based on the REAP principles that was developed at the University of Ulster. In workshops, course teams (or those thinking through a peer review design) use the principles cards and the timesheet or flip chart paper to discuss and map out a set of peer review activities within a module or course. In effect, the workshops put the principles in the 'hands of the user' enabling them to construct, reconstruct and co-construct

their own understanding of the principles while engaging in design activities. These conceptual artefacts (principles) have been piloted in a number of workshops and have been disseminated at a number of national events (see below).

A second workshop was held at the University of Strathclyde with teaching, academic and support staff, and a representative from the Students' Association. The workshop introduced theoretical and practical considerations relevant to the design and implementation of peer review activities and workshop participants had the opportunity to discuss design of peer review activities relevant to their own disciplinary context and to share and discuss their ideas with others. This included reflecting on previous experiences of peer review and planning future implementations for teaching and learning. 3 of the staff members participating are involved in teaching and supporting the University's Management Development Programme (MDP) which is taught to all students in the Business School (approximately 500 students per year). These staff members were able to use the workshop to assist planning and development of the MDP to incorporate peer review. The workshop provided a further opportunity to test the workshop materials in practice, within a high profile institutional programme.

Forthcoming Resources

- **Student facing resource:** The original PEER Toolkit project plan proposed that, in collaboration with the Students' Union (USSA) at the University of Strathclyde, some resources would be produced for and by students on peer review. Staffing and structural changes within the supporting department have impacted the timescales over when this could be taken forward, however, this work will be embedded within internal plans going forward, through liaison with the University's Assessment and Feedback academic champion and through student engagement within the University's Learning Enhancement Committee. In the meantime discussions have been taken forward with respect to a leaflet for students on peer review that would outline the benefits for learning, for future employability and for partnership approaches to learning and development. The leaflet will be of value to other institutions wishing to promote peer review and to other Student Unions. Furthermore, there is commitment on the part of the USSA to take forward this work as part of a wider focus on assessment and feedback within the institution for 2013-14. This will be led by the professional staff within USSA and the incoming new Vice President Education and Representation.
- **Senior Management Briefing paper:** to be used internally at the University of Strathclyde but constructed as a template so that it can be used in other institutions. This briefing paper will include the rationale for peer review and ideas for bringing stakeholders on board and for supporting implementation across faculties and disciplines and for its embedding in enhancement processes.

3. **How did you go about embedding your resources / outputs / outcomes into the wider community?**

The Story

The PEER Toolkit project involved summarising the current research on peer review and lessons from experiences of peer review practice and then creating a conceptual framework so as to package these ideas as a set of web pages that teachers and others could use to help them explain the educational value of peer review and to help them design and implement peer review in a research-informed way.

A key feature of the toolkit is that it meets the needs of different stakeholders by creating different entry points to these web resources depending on user-interests. For example, entry points include the educational rationale for peer review, design decisions that might be considered during implementation, research-informed principles of good peer review design (also packaged as artefacts to support design workshops or as ideas to be put into policy), frequently asked questions about peer review, descriptive case examples of implementation in different disciplines etc.

The project team also worked with practitioners researching peer review or involved in its implementation to collate case studies. Some case studies actually extend the research with new findings (biochemistry, design engineering, psychology) whereas others involved collating detailed examples of good practice by interviewing practitioners and writing up the case examples for the web site.

Stakeholders have been involved in a variety of other ways and in particular to help the project team evaluate the resources. Key educational informants have commented on the web resources that have been developed and on the principles of good peer review practice. Detailed feedback on the principles and the website has come from Dr Steve Draper at Glasgow University, Dr Alan Masson from University of Ulster and Dr Michela Clari from the University of Edinburgh. Workshop participants at Strathclyde and at Ulster have provided evaluations of the merits of using principles of peer review when designing review activities. Ideas about peer review have also been tested across a number of workshops and presentations. Feedback has been exceedingly positive; however there is still scope to refine the principles further and this will continue beyond the funding period of the project as outlined below.

Dissemination Activities

A number of presentations and workshops have been provided on the activities comprising this PEER Toolkit project. These include:

- 5 June 2012: Presentation to Dutch Special Interest Group on e-Assessment, Vrije Universiteit, Amsterdam – via skype
- 28 June 2012: Keynote presentation at Conference 'New Perspectives on Feedback' at Oxford Brookes University in conjunction with Higher Education Academy.
- 22 January 2013: Seminar at Centre for Pedagogy, 'Feedback on Learning: in the hands of the student', Liverpool Hope University
- 28 June 2013: Keynote presentation at Annual Teaching and Learning Conference Talking about Teaching. Title of presentation 'Feedback on Learning: in the hands of the student', York St John University
- 18 February 2013; Webinar/ workshop entitled Peer Review and the Development of Evaluative Skills' JISC Assessment and Feedback programme. Recording available here.
- 27 February 2013: Presentation on Peer Review and Workshop on how to implement peer review at the University of Ulster.
- 27 March 2013: Assessment Summit Assessment Summit: organised by JISC RSC Scotland with participation from Scottish Qualifications Authority and Scottish College Development Network. Keynote and workshop led by David Nicol and Alan Masson (University of Ulster).
- 10 May 2013. Workshop on peer review for academic staff including feedback on peer review principles from staff with experience in implementing peer review at the University of Strathclyde.

Publications

Papers have also been published on peer review to supplement the dissemination activities and to reach a wider stakeholder base. These currently completed include:

- Nicol, D (2013) The case for peer review, Perspectives on Pedagogy and Practice, Published by University of Ulster.

- Nicol, D., Breslin, C and Thomson, A. (2013) Rethinking feedback practices in higher education: A Peer Review Perspective, *Assessment and Evaluation in Higher Education*
- Nicol, D (2012) Resituating feedback from the reactive to the proactive. In D. Boud and L. Malloy (eds) *Effective feedback in higher and professional education: understanding it and doing it well*. Routledge, Taylor and Francis Group.

Internally, the output will be disseminated through the University's Learning Enhancement Framework, in partnership with the academic champions, during 2013-14.

4. **What impact has your embedding benefits project had and who are the beneficiaries? Include evidence of impact wherever possible (e.g. survey results, evaluation, cost benefit analysis etc.)**

Impact

Peer review is being recognized as a new way of thinking about feedback practice in the tertiary education sector. The argument that feedback practices in higher and further education do not simulate how feedback operates in professional practice is gaining momentum. In employment settings professionals rarely receive feedback from a single source (normally they have to reconcile different feedback perspectives) and they are not just consumers of feedback they must be effective producers. The question raised by this observation is: how are these skills to be developed in further and higher education? The PEER Toolkit project advocates peer review as a way of addressing this gap.

Evidence of increased awareness of this issue and of the PEER Toolkit resources is the number of institutions beginning projects on peer review and referring to the Toolkit – for example, as a result of the PEER Toolkit project dissemination there are new initiatives at University of Ulster, University of West of Scotland, Liverpool John Moores, York St Johns, University of Edinburgh, University of Glasgow, University of Durham, University of Cadiz to name some. None of these institutions were part of the original PEER project. Other institutions are considering the implications of peer review for future policy and strategy (e.g the Open University, Faculty of Education, Language Studies). Also, the idea of peer review as a strand in the development of better feedback practices has been taken up by some of the institutional projects on the JISC Assessment and Feedback programme in particular at the University of Dundee (Interact Project) and the Institute of Education University of London (Ipsative assessment project).

It is difficult to gauge the full scale of take up of PEER Toolkit outputs given that the principles and the workshop resources for peer review design have only recently been fully developed. Evidence of use of the website resources and the principles-toolkit will take time to become available across the higher and further education sectors.

5. **What outputs has your project produced?**

The output of the project is detailed within Section 2, as the project was focused on the delivery of useful resources. Outputs include:

- A set of web pages on peer review comprising a 'guidebook' with different pathways of use, please see: <http://www.reap.ac.uk/PEERToolkit.aspx>.
- A set of principles of peer review with examples of implementation;
- A workshop toolkit;
- Three published papers;
- Design Studio:
<http://jiscdesignstudio.pbworks.com/w/page/65218129/Learning%20by%20Reviewing%20Oproject>.

Under development are:

- A management briefing paper;
- A leaflet on peer review to be collaboratively produced with the Strathclyde Students' Union.

6. How will the embedding benefits activity be developed further/sustained?

Work will continue on the PEER Toolkit pages at <http://www.reap.ac.uk/PEERToolkit.aspx> beyond the project as it is part of a suite of resources being developed at the University of Strathclyde on student learning and development. These resources integrate with and follow on from the REAP project which is still having an impact at Strathclyde and elsewhere.

Embedding activities are continuing at the University of Strathclyde and will be further developed through a paper which is being constructed for consideration within the University's strategic committees for Education. This will inform a wider piece of work within the University, sponsored by the internal Education Excellence Fund, which is taking forward a focus on assessment and feedback good practice within the institution, under the steering of an academic champion for Assessment and Feedback. This will facilitate reflection upon the promotion of peer review as a core curriculum activity. Similar processes are underway at the University of Ulster where peer review has been recognized as a platform for future development of assessment and feedback processes.

Dissemination and further embedding will be further promoted through current initiatives with the Scottish Colleges Development network where there are planned workshop activities on peer review for further and higher education practitioners on June 11 and for senior managers in November 2013. The PEER Toolkit project team will continue to disseminate these ideas across other institutions through workshops and presentations. In addition, the University of Cadiz in Spain has been experimenting with the peer review principles and the workshop artefacts and intends to disseminate these ideas to four Latin American partners through a European funded project entitled DevalSimWeb. In addition, Professor Nicol has been invited to Deakin University in Melbourne for 1 week in September 2013 where he will provide consultancy on the implementation of peer review. He will also make presentations on this topic at a number of other Australian Universities.

Contact has been made with the UK Higher Education Academy [Erica Morris] to ensure that the PEER Toolkit web pages are described and linked to from the HE Academy website. This will help disseminate the findings of the project more widely.

7. Summary and Reflection

Lessons Learned

The main lesson learned through the activities and research conducted as part of the PEER Toolkit project is that peer review is an underutilized approach to learning enhancement. It has much greater potential than has hitherto been realized and it is possible that students might learn more from giving feedback on peer work than from receiving feedback from the teacher or peers (see Nicol, Thomson and Breslin, 2013). Research shows that producing feedback reviews develops students' critical thinking, the making of evaluative judgments about other's work, engages students actively with assessment criteria and standards and gives them insight into the range of different ways that quality work might be produced. In effect, students report that peer review not only helps them develop their own evaluative skills but it also activates reflection on their own work thereby promoting learning transfer. Over time this should result in students developing a more sophisticated capacity to monitor and improve the quality of their own work during its production. These findings are just a beginning and much more research is required to validate and extend our understanding for peer review.

Top tips

In terms of replicating a project like that described in this report – the PEER Toolkit project – a number of observations can be made:

1. It is important at the outset to have a clear educational rationale for the project based on prior research, for example, this project was founded on research showing that reviewing the work of peers provides some clear learning benefits for students and staff alike. This undoubtedly assisted with 'selling' the concepts to the staff and student community.
2. In a project of this type ways of operationalising the educational ideas must be made explicit and accessible: principles and examples of practice are one way of achieving this. These enable the course teams to explore the theoretical concepts in real terms in relation to their own teaching.
3. Staff development resources should be developed to support academics wishing to implement new practices, for example workshop processes and principles as artifacts. Having tangible artifacts, i.e. the principles, assisted with subject specialists focus on what issues were critical to them in their own context.
4. As well as supporting bottom-up local change with new educational ideas and resources it also helps if the senior managers also embed the ideas in policies and procedures so that top-down processes give validity and endorsement to these local activities. This is the current situation at the University of Strathclyde where endorsement is being sought from the University's strategic committees for education to develop further this work on peer review.