

# Case study: introducing peer support and assessment for learning approaches into individual projects

Jenna Tudor [jenna.tudor@northumbria.ac.uk](mailto:jenna.tudor@northumbria.ac.uk)

CETL AfL, Northumbria University

## Abstract

*This case study describes a project, implemented to support and motivate final year students on a BEng (Hons) Mechanical Engineering programme, which introduced peer support for students undertaking their final year individual investigative projects.*

*Peer support was introduced after a decision was made to implement Assessment for Learning (AfL) approaches to assist students with their projects. Small groups were established and facilitated by a member of staff and this provided students with an opportunity to discuss their projects with their peers, share their expertise, receive informal peer feedback and reflect on the feedback given by their supervisors. The project was used as a mechanism to 'foster student development in taking responsibility for evaluating, judging and improving their own performance by actively using a range of feedback' (CETL AfL, 2009).*

*This case study discusses the motivation for the introduction of peer support, the execution of the project and the associated organisational issues.*

## 1. Background

Final year Mechanical Engineering students on the BEng (Hons) programme at Northumbria University are required to complete an individual investigative project, with supervision from a member of staff. Supervisors are allocated 12 hours within their workload for each student they supervise per academic year. This workload allocation is intended to allow supervisors to provide regular supervision meetings, complete marking and provide student feedback. It is therefore understandable that it can be difficult, within the limited supervision time, to give focused technical support on an individual project as well as dealing with generic module concerns. Supervisors have also reported that students often seem to lose motivation part way through their individual projects. The decision was made by the teaching team on the project module to introduce Assessment for Learning (AfL) approaches to address these two issues. An example of an AfL approach is explained by Sambell et al. (2007) as 'making opportunities for informal feedback' through 'peer review, working with other students and through active learning and teaching approaches where staff can also provide guidance and comment.'

Staff at the Northumbria University Centre for Excellence in Teaching and Learning: Assessment for Learning (CETL AfL) have developed six conditions for assessment for learning (CETL AfL, 2009). The introduction of small group sessions into the final year

individual project module allowed for three of the six conditions to be addressed. The AfL approach to the design of the sessions developed students' abilities to evaluate their own progress and direct their own learning and created a low stakes, confidence-building setting in which students could obtain rich, informal peer feedback.

In addition to the feedback element, the small group sessions also provided regular contact with a member of University staff (the staff facilitator) who could monitor progress and deal with any student concerns about the module or individual projects. The sessions also provided an opportunity for students to share ideas and good practice. As Harris and Bell (2003) explain, 'much of real life is carried out in groups of people' where work within groups can have purposes such as to 'elucidate misunderstanding and difficulty, to practice skills, to explore personal and professional attitudes and values, to enable a two way exchange of information.'

The facilitator preparation was minimal. It consisted of reading short descriptions of the student projects and then organising the students into small groups in which projects with similar elements (such as the software or the analytical skills required) were placed together. The groups were also arranged so that the members did not all have the same project supervisor, ensuring that a range of different student experiences could be shared. Throughout the semester the facilitator was required to act in response to students during the session, as opposed to leading the session. Students were required to attend the sessions once a fortnight and be prepared to discuss what progress they had made on their individual projects. Trigwell et al. (1999) highlight the need to attempt to 'improve the quality of student learning' and encourage 'higher quality, student-focused approaches to teaching', while Orsmond et al. (2002) explain that 'to engage students fully in the learning process and to encourage them to take responsibility for their own learning requires academic staff to make a shift from teaching to facilitating active learning.'

## **2. Methodology**

Cooper (2000) explains that if feedback is to 'work', and if students are to learn from it, then 'they need to be given an incentive and the opportunity to use it.' Within this context the group session offered itself as a forum in which to discuss issues and explore feedback, thus providing greater opportunity for comments to be taken on board and made use of by students.

The sessions were run with groups comprising approximately five students. Each group met for half an hour every two weeks. Between sessions, students would meet individually with their supervisors to discuss the technical aspects of their project and were required to manage their own time effectively in order to progress their project work before their next supervision meeting. The peer sessions were facilitated by a member of staff who was not a supervisor for any of the projects. The facilitator made brief notes of what students referred to in each session to allow progress to be monitored on a fortnightly basis and to allow the staff facilitator to share good practice examples between groups. These notes were also useful as prompts to start conversations in the sessions. The issues discussed at the sessions were considered a method of 'feedforward' for students as they were able to take the comments on board and feed them into both their project planning and their individual discussions with supervisors. If several students raised the same issues the facilitator would feed this back to the supervisory team and ask them to respond to the common issue, rather than each individual student following it up with his/her own supervisor.

The sessions were designed to be informal and participation was worth 5% of the 20% of the marks available for the process of the project work. Students were able to reflect on the comments given by their peers during the sessions and make use of the informal feedback they had received for their individual projects. They were asked to give a five minute presentation six months into their project as a practice for their final viva examination, with

the other four members of the group asking questions on the presentation. Students said that they found this useful, both in terms of the feedback they received and the fact that they could build on the material they had prepared for this interim presentation for use in their end of project viva assessment.

### **3. Issues**

Some students questioned the way that the groups had been established, for example, if they knew of a peer doing a very similar project but who wasn't in their group they seemed concerned by this. Once it was explained that the groups had also been established to share knowledge between students of different supervisors, they seemed satisfied. A small amount of flexibility was allowed and, if students couldn't make a particular session, they were able to attend a different group, provided prior consent had been given. This was to ensure that numbers for each group did not rise above six as it was felt that a group larger than this would make it difficult for all members to participate fully in the discussion.

The space used for the sessions worked well as an informal one. For those considering implementation of a similar system a small classroom, meeting room or other informal space (rather than a lecture theatre) would be ideal.

The time requirements for the facilitator were two hours a week and, as discussed earlier, the facilitator was a member of University academic staff but not a project supervisor. It was essential that the facilitator was not part of the supervisory team but that they were familiar with the investigative projects module so that they could give generic project advice when requested. By ensuring that the facilitator was not a supervisor, the students were able to talk freely about their projects and they could discuss between themselves the different advice they had been given by their individual supervisors (e.g. what they felt had helped and any points that still required clarification). The familiarity of the facilitator with the module allowed topics such as academic writing, material requisition, availability of facilities and time management to be discussed amongst students, with the facilitator able to correct any misconceptions or offer appropriate advice when necessary. It is suggested that without working knowledge of the module then the facilitator may have been unable to offer the specific advice often requested by students during the sessions.

### **4. Benefits**

In addition to the peer discussion and feedback, sessions were also designed so that the facilitator could provide students with regular contact with University staff. The sessions allowed student progress to be monitored, concerns to be dealt with (by peers, by the facilitator or referred back by the facilitator to the supervisory team) and also gave students the opportunity to prepare for their summative assessments. The sessions also allowed for greater communication with students as they could be used flexibly to discuss any issues related to the module, as opposed to the once-weekly meetings with supervisors where, due to time constraints, the focus must be related specifically to the technical content of projects.

The benefits of group work have been discussed by Keppell et al. (2006):

'Group work, group projects and collaborative learning encourage students to learn from other students as well as from the lecturer. Peer learning may involve cooperation, communication and the giving and receiving of peer feedback. In addition peer learning emphasises the sharing of knowledge and ideas between students in a reciprocal partnership.'

The practice viva was appreciated by students for a number of reasons: they were able to produce a presentation which could be adapted for their final viva; practice presenting to a small group of people and also practice answering questions as posed by their peers. The feedback from the questions, and any discussion which followed, could then be used by students in preparation for their final viva and their project report.

Following the meetings a list of frequently asked questions (FAQs) has been produced to support students in the next cohort. The information from the sessions has also been used to inform the delivery that students receive in the second year of their studies, with the aim of better preparing them for the task of completing their final year project. Improvements to delivery have included the introduction of practice literature review tasks, of engineering ethics at an earlier stage in the course and the teaching of information skills.

## 5. Evidence of success

Students were asked to give some feedback at the end of the academic year by reflecting on how they felt about the sessions. As a catalyst for this the students were asked to complete the following statement: 'the project mentoring sessions have...'

Here are some of their responses:

'...proved useful to help keep myself disciplined in achieving targets and goals. It also gives an insight into what other students are working on and any tools that can be adopted.'

'...been very useful to me. If I have a problem I can share it with four or five people to get better advice. It is also good as it is someone else other than the supervisor. Very valuable sessions.'

'...have been useful to see how other students have been progressing with their projects. Provided motivation throughout project.'

Staff felt that, after three months, students had progressed much faster than they would normally have done and that the sessions had also been useful, from a staff perspective, in terms of *enhancing* the supervision sessions. One member of staff said that 'the addition of the group sessions means that supervision time can be used properly; focusing on discipline and project specific issues.'

## 6. How can other academics reproduce this?

This system could easily be reproduced. In our case it required two hours of staff facilitator time per week (30 minutes per group: four groups per week).

Consideration should be given to the allocation of marks for the sessions. It is recommended that, in order to keep within the spirit of assessment for learning, it should be ensured that sessions are kept 'low stakes' with an emphasis on their formative nature.

## 7. Reflections

The space provided by the Centre for Excellence in Teaching and Learning: Assessment for Learning at Northumbria University to allow the sessions to take place was invaluable. It took the students out of their normal teaching environment and the small classroom space (and the coffee machine!) helped the atmosphere stay informal, which encouraged discussion.

The Mechanical Engineering subject team at Northumbria University are running the sessions again during the academic year 2009/10 and, for the most part, they will function in the same way. Students will again be grouped according to project title and supervisor, although greater time will be taken to explain grouping structure to them at the start of the semester. Approximately 40 students were involved in the pilot stage with the project being rolled out to larger numbers in its second year.

## 8. References

- CETL AfL (2009) *What is CETL AfL? Available from* [http://www.northumbria.ac.uk/cetl\\_afl/whatis/?view=Standard](http://www.northumbria.ac.uk/cetl_afl/whatis/?view=Standard) [accessed 14 November 2009].
- Cooper, N.J. (2000) Facilitating learning from formative feedback in level 3 assessment. *Assessment and Evaluation in Higher Education*, **25** (3), 279–291.
- Davison, G., Harman, K., Hou, J. and Tudor, J. (2009) Assessment for learning in practice: case studies from Northumbria's CETL. *Northumbria Conference 2009*, 8 September 2009, Newcastle, UK.
- Harris, D. and Bell, C. (2003) *Evaluating and assessing for learning*, 2<sup>nd</sup> edition. London: Kogan Page.
- Keppell, M., Au, E. and Chan, C. (2006) Peer learning and learning-oriented assessment in technology-enhanced environments. *Assessment and Evaluation in Higher Education*, **31** (4), 453–464.
- Orsmond, P., Merry, S. and Reiling, K. (2002) The use of exemplars and formative feedback when using student derived marking criteria in peer and self-assessment. *Assessment and Evaluation in Higher Education*, **27** (4), 309-323.
- Sambell, K., Gibson, M. and Montgomery, C. (2007) *Rethinking feedback: an assessment for learning perspective*. (Red Guide) Newcastle: Northumbria University.
- Trigwell, K., Prosser, M. and Waterhouse, F. (1999) Relation between teachers' approaches to teaching and students' approaches to learning. *Higher Education*, **37** (1), 57–70.

Background information

<b>Discipline</b>	<i>Generic: Mechanical Engineering Specific: Investigative Projects</i>
<b>Participants</b>	<i>Approx 40 students 1 member of staff to act as facilitator Supervisory team (approx 8 staff)</i>
<b>Level</b>	<i>Undergraduate Final year</i>
<b>Pedagogical approach</b>	<i>Assessment for learning approaches (Sambell et al., 2007) Peer Learning (Keppell et al., 2006)</i>
<b>Teaching methods</b>	<i>Two hours of staff facilitator time per week, 30 minutes per group and four groups per week. Additionally, independent student work and student contact with individual supervisor</i>
<b>Materials required</b>	<i>Informal space for peer group meetings</i>
<b>Assessment used</b>	<i><b>Formative:</b> Through regular interaction with peer groups and project supervisor. <b>Summative:</b> Assessed by supervisor and moderator <b>Written (60 % of total mark):</b> Individual project report <b>Oral (20% of total mark):</b> Work defended by viva <b>Project Work (20% of total mark):</b> Approach to the investigation, initiative shown, achievement of objectives</i>
<b>Contact Details</b>	
<b>Author(s)</b>	<b>Jenna Tudor</b> , Northumbria University Tel: 0191 243 7083, email: <a href="mailto:jenna.tudor@northumbria.ac.uk">jenna.tudor@northumbria.ac.uk</a>
<b>Date</b>	November 2009