Student Perspectives on Formative Feedback: An Exploratory Comparative Study

G Rubner*, F Saunders**.

*School of Electrical and Electronic Engineering, **School of Mechanical, Aerospace and Civil Engineering, Faculty of Engineering and Physical Sciences. University of Manchester

contact: g.rubner@manchester.ac.uk

1.Introduction

This project is a two-year large-scale explorative study into student perceptions of formative feedback in two schools from the faculty of Engineering and Physical Sciences at the University of Manchester. The aim is to gain a better understanding of student preferences as to the function, content and mode of delivery of formative feedback. In this first phase of the study several hundred undergraduate and postgraduate students from three taught courses in the schools of Mechanical, Aerospace and Civil Engineering, and Electrical and Electronic Engineering, were surveyed. This was followed up by focus group meetings with volunteer students from the three courses. Results and conclusions from the first phase indicate that the majority of the students surveyed see the purpose of feedback as to help correct misunderstandings, or help to help pass the exam, or solve problems set by the lecturer. Their overall preference is for as much detailed as possible in the feedback given, rather than just brief explanations.

2. Background

Despite improvements in recent years, there is evidence that there remains general dissatisfaction among students in the UK HE sector, with regard to the feedback they receive (HEFCE 2014). Reasons for this dissatisfaction are diverse and not always clear, despite there being much anecdotal evidence that teaching staff already believe they are meeting students' needs by providing plenty of feedback.

This particular study focusses on formative, rather than summative, feedback, which can be either credit or non-credit bearing. In the view of the authors the primary purpose of formative feedback is to help students assess what level they are at within the course unit and in which areas remedial action may be required to improve their performance.

There is a widely-held view that for formative feedback to be effective it should support and help students become self-regulated learners (Nicol and MacFarlane-Dick 2006). That this goal is not always achieved is often blamed on students not using and/or applying formative feedback in the ways expected by teaching staff. It is often argued that students may be unclear about how to interpret and use the feedback given, due to lack of clear guidance given by tutors and/or students' inexperience in interpreting feedback (Robinson Pope 2013). However some studies have tried to probe deeper into the reasons, and shown that while they are often able to express their expectations in regard to formative feedback (Perera et al 2008), there is sometimes a lack of alignment between tutor-student expectations (Orsmond and Merry 2011).

3. Method

The three course units selected for this initial study were drawn from two Schools in the Faculty of Engineering and Physical Sciences at The University of Manchester. The units were selected to cover both undergraduate and post graduate taught programmes, with a cohort size ranging from 35 to 185. Table 1 below provides a short description of the three chosen course units.

School	Course name/Code	Level	Pedagogy	Size of cohort
Mechanical Aerospace and Civil Engineering	Project Finance for Infrastructure Projects (MACE 60023)	Post graduate Taught (level 4)	Weekly face to face lectures supplemented with interactive case studies	185
Electrical and Electronic Engineering	Data Networking (EEE30024)	Undergraduate (level 3)	Weekly face to face lectures supplemented by laboratory-based coursework; use of both on-line and in-class quizzes.	40
Electrical and Electronic Engineering	Concurrent Systems (EEEN30052)	Undergraduate (level 3)	Weekly face to face lectures supplemented by laboratory-based coursework; use of both on-line and in-class quizzes.	35

Table 1: Summary of the course units that participated in this study.

The study utilised a mixed method approach based on two sources of data: a paper based quantitative survey and student focus groups. Focus group meetings were held once the course unit assessment had been completed. Collecting the two sets of data sequentially allowed us to pose the "what and how" questions in the survey and the more open ended "why" questions in the focus groups.

The paper based survey was piloted on two small groups of students from the course units in the study. In total 127 completed questionnaires were submitted, giving a response rate of 48.8% (54% for MACE 60023, 47.5% for EEE30024 and 25.7% for EEEN30052). The aim of the questionnaire was to gather basic demographic information on the cohort, and then to explore what types of formative feedback students had received on that particular course unit as well as to probe their preferences as to the function, content and mode of delivery of feedback (Narciss and Huth, 2004).

Three student focus groups, one from each course unit, and each consisting of six students, were then held once the unit assessment had been completed and graded. The aim of the focus groups was to assess students' understanding of the term "formative feedback" and to understand why students preferred particular functions, content and mode of delivery of formative feedback. Collectively both quantitative and qualitative data were designed to answer the two research questions outlined in the introduction above.

4. Data Findings

Respondent demographics across the three course units are provided in Table 2. There are similarities across respondents from the three units in terms of male dominated gender balance, but the age profile of respondents from the two undergraduate units (EEE30024 and EEEN30052) is slightly lower than the postgraduate taught unit, whose proportion of non native English speakers is also considerably higher. These respondent figures are representative of the wider cohort demographics. .

	MACE 60023	EEE30024	EEEN30052
Male / Female %	59% / 41%	94% / 6%	77% / 23%
Age profile	75% are 22-25 yrs	67% are 18-21yrs	77% are 18-21 yrs
Percentage non-native English speakers	89%	56%	44%

Table 2 Respondent demographics

The first research question posed by the study was "How do UG and PGT students on 3 units in the Schools of MACE and EEE understand the term "formative feedback"?" The responses to this question were varied and fascinating.

Respondents viewed formative feedback as being concerned with the regular monitoring of a student's performance via periodic assessments. Formative feedback is as likely to be verbal as it is written, and can be conveyed in response to a student question mid way through a lecture, or via a quiz completed on a Virtual learning Environment or as written coursework feedback. Interestingly, several students were not at all clear what formative feedback is and how it relates to its counterpart summative feedback. A number of students also conflated formative feedback given by lecturers to students to the evaluation questionnaires which students are given to assess the quality of lecturers. These misconceptions are central to the challenge of providing effective formative feedback to students, and ensuring that students recognise all forms of formative feedback that they receive on a particular course unit.

In the questionnaire responses students described a broad range of types of formative feedback that they had received on these three course units – from archetypal written feedback on a submitted coursework, online and in class quizzes, and lecturer responses to student questions. A tentative conclusion drawn from the array of formative feedback types listed by students is that students equate any form of academic interaction with their lecturer as an instance of or opportunity for formative feedback.

The second research question posed by this study was "What are student preferences as to the function, content and mode of delivery (Narciss and Huth, 2004) of formative feedback?"
This question was explored by means of Questions 5 -7 of the survey (see Figure 1) and revisited in the focus groups to probe student preferences in more depth.

Figure 1: Survey questions designed to elicit student preferences for function, content and mode of delivery of formative feedback (questions 5, 6 and 7 respectively)

The ranking of responses to question 5 across the three cohorts is shown in Figure 2, illustrating a common preference across all three course units for the feedback to be centred on resolving any misunderstandings rather than on enabling students to simply pass the final examination.

Purpose of Feedback	Ranking of student preferences		
	MACE 60023	EEE30024	EEEN3005 2
To help correct any misunderstandings I may have	1	1	1
To help me improve my problem solving ability	2	3	3
To help me pass the examination	3	2	2

Figure 2: Respondents ranking of the purpose of formative feedback.

This is a reassuring and encouraging signal from students, given prior findings by Saunders and Gale (2012) that students can often be highly strategic in their approach to learning activities with their attention limited to doing what is required to pass the course unit and no more. "Little and often" was the mantra often repeated in the focus groups, with respondents preferring a number of discrete formative assessments to one major formative assessment over the course of a semester long course unit.

Respondents also expressed a strong preference (Question 6) for formative feedback which contained more rather than less detail (see Figure 3).
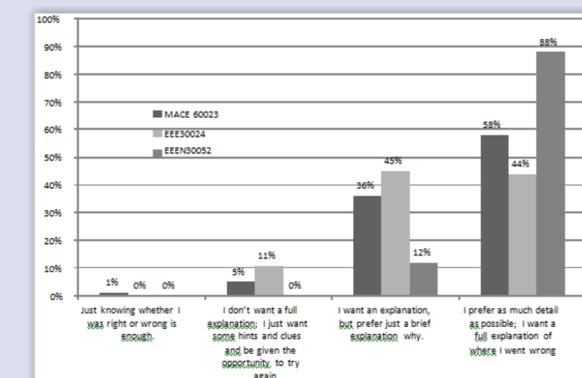

Figure 3: Respondents preference for the content (level of detail) in formative feedback.

References

HEFCE National Students Survey results trends and Analysis: http://www.hefce.ac.uk/media/hefce/content/pubs/2014/201413/HEFCE2014_13.pdf (accessed July 2014)

Narciss, S., & Huth, K. (2004). How to design informative tutoring feedback for multimedia learning. In H. M. Niegemann, D.Leutner, & R. Brunken (Ed.), Instructional design for multimedia learning (pp. 181–195). Munster, New York: Waxmann.

Nicol and MacFarlane-Dick Nicol, D., and D. MacFarlane-Dick. 2006. Rethinking formative assessment in HE: a theoretical model and seven principles of good feedback practice, in Enhancing student learning through effective formative feedback, The Higher Education Academy.

Orsmond Merry (2011) Feedback alignment: effective and ineffective links between tutors' and students' understanding of coursework feedback, Assessment & Evaluation in Higher Education, 36:2, 125-136

Perera et al (2008) Formative feedback to students: the mismatch between faculty perceptions and student expectations, in Medical Teacher 2008; 30: 395-399.

Robinson Pope (2013). Can we meet their expectations? Experiences and perceptions of feedback in first year undergraduate students, Assessment & Evaluation in Higher Education, 38:3, 260-272,

Saunders, F.C. & Gale, A.W. (2012) Digital or didactic: Using learning technology to confront the challenge of large cohort teaching. British Journal of Educational Technology, 43(6), pp847-858.