
Symposium: Educational Innovations in Higher Education: Conditions to Make It Work

ENHANCING GUIDANCE AND FEEDBACK TO STUDENTS: FINDINGS ON THE IMPACT OF EVIDENCE-INFORMED INITIATIVES

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Abstract

At the 2003 EARLI Conference in Padova, we presented a symposium paper which discussed the findings of a study of three final-year courses in Biology. While the first part of those findings examined the development by the students of characteristic *ways of thinking and practising* in biology as a discipline, the second part of the findings highlighted features of the teaching-learning environments represented by the three course units — and notably, variations in the provision of advance guidance and feedback to the students on their assessed work — which appeared to facilitate or inhibit the quality of their learning. The present paper focuses on this latter theme, bringing together data from these same three course units with data from three first year undergraduate course units from the same three departments.

The first part of the analysis presented here is a more detailed account of the students' perceptions of the pre-assignment guidance and feedback given on their assessed work. This is followed by a report on follow-up work in two of the departments, taking one first year course unit and one final year course unit as case studies. In each of these settings varying steps had been taken to introduce changes designed to address students' concerns about the provision of guidance and feedback on their assessments. As in the preceding empirical studies, data had been gathered from students via two questionnaires which had been designed specifically for use in the large-scale research project¹ of which the present study forms part, and by means of semi-structured interviews with groups of students. Over the course of the project a total of 1741 *Learning and Studying Questionnaires (LSQ)* and 887 *Experiences of Teaching and Learning Questionnaires (ETLQ)* were collected from the students in the six bioscience course units. A total of 42 interviews were carried out with 117 bioscience students, and interviews were held with 32 bioscience teaching and support staff. The analysis of the impact of the changes to the two course units in focus here reveals a mixed set of outcomes, with marked variations across the two settings in the extent and scope of the impact of the guidance and feedback initiatives. The paper explores possible reasons for these variations in impact, while also highlighting fundamental differences between first- and final-year undergraduate courses which may affect the ease with which changes can be implemented.

¹ The *Enhancing Teaching-Learning Environments in Undergraduate Courses (ETL)* Project runs from January 2001 to June 2005 and is funded by the UK Economic and Social Research Council as part of the Teaching and Learning Research Programme.

1. Introduction

The concern of this paper is with a set of pedagogical initiatives in which empirical evidence was a key stimulus to change. Within the very extensive literature on pedagogical and curricular changes and developments in higher education, the main drivers of change can take many different forms. Such drivers can for instance, be predominantly conceptual (e.g. a reappraisal of assessment practices to reward deep but inhibit surface approaches to studying), practice-led (capitalising on new strategies to foster interaction in lectures, for instance) technological (incorporating into course provision a 'virtual learning environment' such as WEB CT or Blackboard), economic (devising teaching-learning strategies to address rising class sizes), strategic (addressing a policy initiative, for example, to foster students' teamworking skills), procedural (e.g. more robust monitoring of student progress to meet strengthened quality assurance requirements) or subject-led (e.g. adapting course content to reflect recent advances in the discipline). In some, but by no means all, instances of curriculum change, empirical data can [also] be a contributory factor, whether specifically gathered by a course team – e.g. through student ratings questionnaires - or *incidentally* available (Day, Grant and Hounsell, 1998; Hounsell, 2003) through established procedures such as distributions of marks or grades for a given module or course unit.

What distinguishes the set of initiatives discussed in the present paper was that empirical evidence was an important stimulus to the changes reviewed, that further systematic evidence was gathered on the impact of those changes, and that the bulk of this evidence originated from outwith the course team itself, having been compiled by a third-party team of researchers engaged in a large-scale research project in partnership with the departments concerned. That research project was the Enhancing Teaching-Learning Environments in Undergraduate Courses project, and as its title makes clear, it sought not only to investigate teaching-learning environments but also to explore ways of modifying them so as to enhance the quality of the students' learning. Thus, in the project's work in collaboration with its departmental partners, evidence gathered in the first or 'baseline' year was used to inform changes which were introduced by the course team in the following year and which were also systematically monitored by the researchers.

The present paper focuses on the project's work in the biosciences, where baseline data were gathered in six course units spanning three universities, and agreed changes (referred to as 'collaborative initiatives') were subsequently implemented and monitored in four of these course units. In the interests of coherence and economy of presentation, the paper concentrates on a single theme, that of guidance and feedback to students, which proved to be an important dimension in all of the bioscience teaching-learning environments surveyed, and focuses particularly on two of the course units where evidence-informed changes were introduced, a first-year and an final-year course unit.

The paper is in seven parts. Following the present introduction, succeeding sections review the literature on guidance and feedback; outline the settings and research design; examine the baseline findings on guidance and feedback; discuss the course teams' responses to the baseline findings; present the research team's findings on the subsequent collaborative initiatives; and consider the main conclusions and implications arising from the work reported in the paper.

2. Literature Review

The provision of guidance and feedback to students has long been acknowledged as an indispensable part of an effective teaching-learning environment in higher education. It features in standard texts on assessment (e.g. Brown et al./Knight, 1995, Brown and) and in reports of teaching quality assessments (see for example Hounsell and McCune, 2002, pp. 8-10) and in codes of practices (e.g. QAA, 2004). Recently, however, new perspectives on guidance and feedback have been emerging from developments in research, policy and practice. The most widely observed of these has probably been the resurgence of interest in formative assessment (that is, those aspects of assessment which are developmental in their purposes, seeking to help students in pursuing and attaining high standards of achievement) that has been stimulated by the work of Black and Wiliam in particular. In a very substantial review of research findings (Black and Wiliam, 1998) they concluded that well-designed formative assessment can have an impact on learning which is both demonstrable and quite substantial, with gains in learning "among the largest ever reported for educational interventions". And in subsequent school-based research and development (Black et al., 2003), they have explored ways in

which formative assessment might be more effectively pursued. Their work builds on the conceptual insights of Sadler (1989, 1998), who has argued that “students have to be able to judge the quality of what they are producing and be able to regulate what they are doing during the doing of it” (Sadler, 1989, p. 121). Thus effective formative assessment involves not simply providing constructive and timely feedback comments: it also entails assisting students to come to hold a conception of what counts as good-quality work in the subject area.

Paradoxically, however, alongside the upsurge of interest in the positive pedagogical benefits of formative assessment have come growing concerns about a decline in the provision of guidance and feedback on assessed work in higher education. Hounsell (2003) has suggested that one reason for this may be the shift in UK higher education towards modularisation and semesterisation, resulting in more compressed curricular timetables in which assignments tend to be crowded towards the end of courses, leaving students with little or no scope to benefit from a tutor’s feedback on their work (Yorke 2001; Higgins, Hartley and Skelton, 2002; Gibbs, 1999). Another reason may lie in the backwash effects of much larger class sizes and a lower unit of resource (Hounsell, 2003). While student numbers have risen substantially over the past quarter-century, there has been a drop of about 40 per cent in funding per student (NCIHE, 1997, p.45) and a halving of staff-student ratios, with the consequence that contemporary UK students generally undertake fewer coursework assignments than their predecessors and have less face-to-face contact with staff (DfES, 2003).

Evidence on the provision of feedback is limited, but raises further concerns. In national surveys of first-year students in Australia in 1994 and 1999, two out of five respondents expressed dissatisfaction with the helpfulness of tutors’ feedback (McInnis et al., 2000). A review of research findings – mostly from relatively small-scale qualitative studies in the UK and in a single subject area – concluded that while feedback seemed to be widely valued by students, their experiences of getting feedback from their tutors had been uneven (Hounsell, 2003). The quantity of feedback provided by tutors, and its helpfulness to students, appeared to range widely, and could give rise to uncertainty and confusion, since requirements for assigned work seemed to fluctuate from course unit to course unit, and from one tutor to another. Yet some tutors appeared to take it for granted that their expectations of academic work were relatively self-evident or that students would know how to remedy any shortcomings identified.

Finally, however, it should be borne in mind that guidance and feedback practices have themselves been evolving, and in ways which may help to provide a counterweight to shortcomings in provision. Developments in approaches have taken various forms, including the use of criterion-specific marking and commenting pro formas, initiatives which focus on the formative dimension of peer assessment by involving students themselves in generating feedback; and the rise of collaborative authorship and ‘on-display’ assignments such as oral and poster presentations, both of which can have feedback-like effects by opening up opportunities for students to acquaint themselves with one another’s work at first hand, and so help to develop a common understanding of what has — and can be - achieved (Hounsell, 2003). There have also been notable attempts, grounded in research findings, to tease out fundamental guiding principles in the provision of guidance and feedback (Nicol and MacFarlane-Dick, 2004; Gibbs and Simpson, 2004).

3. Settings and Research Design

3.1 Settings

In total six course units or modules were surveyed across three institutions - B1, B2 and B3 – which were selected to be representative of the range of different types of higher education institutions common in the UK. All three departments were actively committed to research and to teaching in the biosciences, while also valuing their links with the wider professional bioscience community.

All of the first year course units were second-semester modules intended to provide an introduction to a range of broad areas of study in the biosciences. Intake sizes ranged from less than 100 to over 600 students, and there were matching differences in the size and scope of staffing inputs (Hounsell, McCune, Litjens and Hounsell, 2005). Each first year module was taught via a combination of lectures, laboratory-based practical work and small-group activities. There were notable differences, however, in how these activities were taken forward and in how the course units were assessed. While two of the

three course units mounted lectures, practicals and tutorials in tandem, in the other the weekly practical sessions blended laboratory experiments with group activities of various kinds, including discussions, debates, writing assignments and poster presentations designed to promote the development of a range of subject-based skills as well as to enhance the students' understanding of the interrelationships between theory and application. Coursework assignments in B2F were linked to these skill-focused activities, and were combined with end-of-module exams in the overall assessment. Assessment in the other two units was also based on a combination on exams and coursework, with the latter having the lowest overall assessment weighting (20%) in B3F.

The three final year course units were one-semester honours-level courses. Their combined enrolment – 83 students in the baseline year, and 47 students for two units in the subsequent year – reflects the typically much smaller cohorts sizes of honours courses relative to first-year courses. The three units differed considerably in their approaches to teaching and learning and in their patterns of assessment. In B1L, twice-weekly lectures were complemented by regular tutorials in which students had an opportunity to raise questions and issues of concern to them; assessment was based on a three-hour examination (60% of the final grade) together with two coursework assignments, each of which counted for 20% overall. In B2L, by contrast, each three-hour session opened with a talk by an external speaker from a biosciences research institute; the students were then assigned problems or questions arising from data linked to the guest lecturer's work, and they tackled these in small groups prior to plenary discussion. Assessment in B2L took the form of a single three-hour exam paper, since it was not feasible to set, mark and return coursework within the relatively short time-span (a half-semester) in which the module ran. Lastly, in B3L formal teaching sessions took the form of weekly seminars in which presentations were given by two of the students, addressing one of ten topics drawn up by the two members of staff; each 45-minute presentation was expected to include overhead slides and a short handout and was followed by questions and discussion. Assessment was wholly based on coursework, combining marks for the students' seminar presentations with grades for two 1500-word integrative essays on questions set by the tutors.

3.2 Research Design

Our work with these course units was taken forward in two stages. In the first year academic year in which we worked with a given course unit the focus was on building up a rich picture of the different aspects of high-quality learning sought in that setting and of the extent to which the teaching-learning environment of the unit supported the desired learning. Once this initial round of data collection with a course unit was complete, a draft report of the findings was provided to the course team, who were given an opportunity to comment on the accuracy of the report and to provide additional information. In four of the settings (B1L, B2F, B3F and B3L) we agreed with the course team that we would work together to take forward a 'collaborative initiative'. The collaborative initiative would take the form of a change, or cluster or changes, that were intended to further improve the quality of the students' learning. For the purposes of this paper, only those aspects of our findings which relate to pre-assignment guidance and feedback will be reported. In those course units in which an initiative was put in place there was another round of data collection in the subsequent academic year, to evaluate the success of the changes.

4. Baseline Findings on Students' Perceptions of Pre-Assignment Guidance and Feedback

4.1 Introduction

In this section of the paper we focus solely on data from the first year of our work with each of the course units. This comprises an overview of the questionnaire data relating to students' perceptions of the teaching-learning environments on their course units, focusing particularly on items relating to students' assessed work. This is followed by an account of a set of themes derived from the student

interview data which represent key dimensions of pre-assignment guidance and feedback, as described by the students.

4.2 Data Gathering

In the first round of data collection with a given course unit, a sample of students participated in semi-structured group interviews in the penultimate week of the unit. All of the students in each unit were invited to complete two questionnaires designed for the project, one at the beginning of the unit and one in the penultimate teaching week (*Learning and Studying Questionnaire* and *Experiences of Teaching and Learning Questionnaire* Entwistle, McCune and Hounsell, 2003). For a detailed breakdown of the questionnaire findings for the biosciences samples see Hounsell, McCune, Litjens and Hounsell (2005). The questionnaires and scoring keys can be downloaded freely at: www.ed.ac.uk/etl.

Semi-structured individual interviews with staff were also carried as part the first round of data collection for each course unit and course documentation was collected to supplement the analysis of the questionnaires and interview transcripts. Table 1 summarises the take-up rates for the different aspects of the data collection from the six course units. One potential limitation of the data collection for the purposes of this paper is that in some cases the students would not have completed all of their assignment or have had all of their feedback when the data was collected. It was not feasible, however, to collect the data any later as it would not have been possible to collect sufficient data from the students after their classes had finished and they were not coming into their institutions on a regular basis.

Table 1 Samples and Response Rates for the First Round of Data Collection

	B1F	B1L	B2F	B2L	B3F	B3L
no. of students	107	44	638	25	96	14
no. of staff	3	2	32	1	14	2
LSQ	46 (43%)	28 (64%)	140 (22%)	–	88 (92%)	13 (93%)
ETLQ	52 (49%)	24 (55%)	271 (42%)	20 (80%)	86 (90%)	14 (100%)
LSQ & ETLQ	33 (31%)	19 (43%)	84 (13%)	–	77 (80%)	13 (93%)
staff interviewed	1	2	22	1	3	2
group interviews	1	5	7	4	3	3
students interviewed	1	13	20	12	10	13

4.3 Analysis

4.3.1 Student questionnaires

The questionnaire analyses reported here focused mainly on the data collected via the Experiences of Teaching and Learning Questionnaire (ETLQ). The ETLQ asks the students for their perceptions of a range of aspects of their teaching-learning environments such as the clarity and coherence of the course unit studied, aspects of the teaching that encouraged high quality learning, the set work and feedback, staff enthusiasm and support, and support from other students. The students responded to 40 questionnaire items relating to their perceptions and these were combined to create a scale showing the students' overall perceptions of their teaching-learning environments.

The items relating to students' perceptions of their assessed work were examined on an item by item basis to support the analysis of the student interview data. The items were also grouped into scales, based on earlier analyses (Entwistle, McCune and Hounsell, 2003) to provide an overview of the students' perceptions of these aspects of their course units.

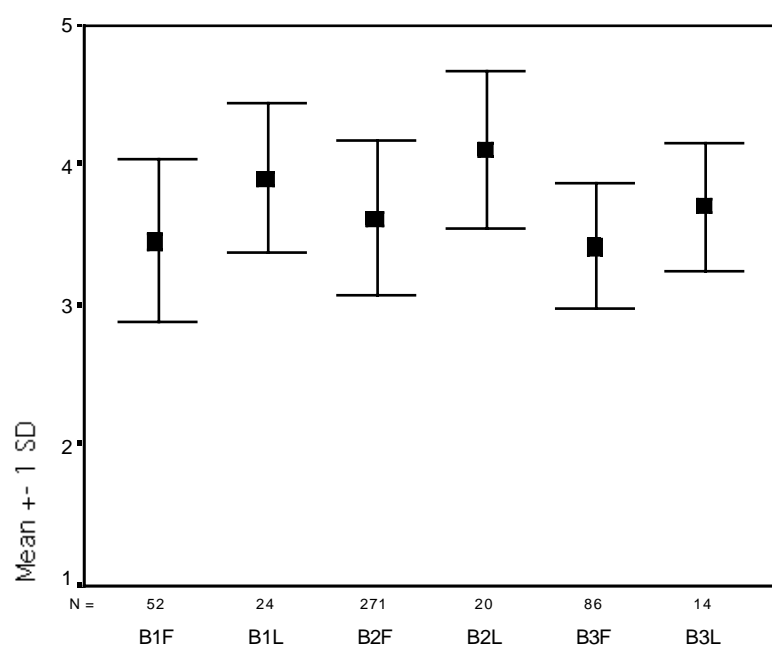
4.3.2 Student interviews

After transcribing the student interviews in full, all of the data relating to guidance and feedback on assessments was selected out from the transcripts and formed the basis of the analyses reported here. Previous analyses of parts of this data set (McCune, Hounsell and Nisbet, 2003; McCune and Hounsell, 2005; (Hounsell, McCune, Litjens and Hounsell, 2005) had involved the identification, discussion and refinement of a range of key themes relating to guidance and feedback on assessment by two members of the project team. In the analyses presented in this paper these key themes were systematically re-evaluated within all of the student interview data collected from five of the six course units in the first year of working with those course units (a total of 22 transcripts, B1F was excluded from this analysis as only one student interview had been conducted). A record was made of how commonly particular themes or issues were expressed across different institutions and levels of study. Counter-examples to the broad picture emerging were sought. Further, the data was checked for additional relevant themes which had not been included in the earlier analyses. This re-evaluation of the data was carried out by one member of the project team and then carefully checked by another team member.

4.4 The students' overall perceptions of their teaching-learning environments

Figure 1 shows the responses of students in each of the course units to the scale created from the 40 items in the ETLQ which asked students about their perceptions of their teaching-learning environments. Although the three final-year units (B1L, B2L, B3L) were perceived more positively than the first-year units (B1F, B2F, B3F), each course unit received a mean score higher than the mid-point of the scale (3), ranging from $M=3.42$, $sd=0.45$ (B3F) to $M=4.11$, $sd=0.56$ (B2L). These broadly positive perceptions were generally supported by the student interview data. More details of these findings can be found in Hounsell, McCune, Litjens and Hounsell (2005).

Figure 1: Overall perceptions of teaching-learning environments



4.5 The students' responses to questionnaire scales relating to their assessed work

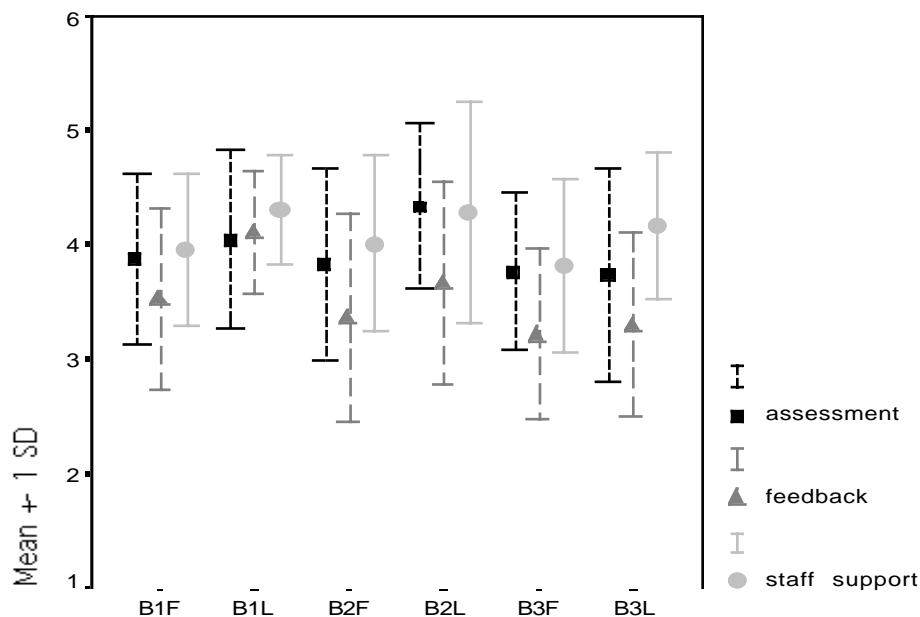
Three of the scales that emerged from items in the ETLQ related directly to the students' assessed work: 'set work and feedback', 'assessing understanding' and 'staff enthusiasm and support' (see Table 2). The responses to these scales are given in Figure 2. In each of the settings staff were seen as generally very

supportive, with means of no lower than 3.85 (B3F). The students also had positive perceptions of how well the assignment tasks they were given assessed their understanding of the course units studied. They were less positive about the guidance and feedback they received on their set work. However, as with the overall perceptions of the teaching-learning environments, none of the mean scores were below the mid-point of the scale.

Table 2: Examples of items from the ETLQ relating to assessment, feedback and staff support

Set Work and Feedback	
31.	It was clear to me what was expected in the assessed work for this course.
35.	The feedback given on my work helped me to improve my ways of learning and studying.
Assessing Understanding	
34.	You had to really understand the subject to get good marks in this course unit.
38.	To do well in this course unit, you had to think critically about the topics.
Staff Enthusiasm and Support	
23.	Staff tried to share their enthusiasm about the subject with us.
25.	Staff were patient in explaining things which seemed difficult to grasp.

Figure 2: Perceptions of assessment, feedback and staff support



4.6 Key aspects of advance guidance and feedback on assessments from the students’ perspectives

On the basis of the student interview data collected in the baseline year from five settings (B1L, B2F, B2L, B3F and B3L) five broad themes were identified which seemed to relate to key aspects of the students’ perspectives on the advance guidance and the feedback provided on their assessed work. The first theme relates to positive experiences of pre-assignment guidance and feedback, particularly in relation to the availability of additional follow-up support from staff on request. More negative findings are identified in the next two themes, which relate to students’ perceptions of shortcomings in the advance guidance and feedback provided on their work. The fourth theme relates to what the students had to say about the

value they attached to the support provided in relation to their assessments, an important theme given the demands such support places on staff time. Finally, we return to the issue of the availability of additional support when requested by students and consider the evidence that this may not be as straightforward as indicated in the students' general comments about the potential availability of such assistance.

4.6.1 Positive experiences of pre-assignment guidance and feedback on assessed work

In all of the course settings students were able to report some positive aspects of their experiences of the support provided in relation to their assessed work. This most commonly related to the availability of additional advice or explanation from staff, should the student choose to request it. For every course unit data was available to suggest that at least some of the students interviewed felt that it would be possible to seek further support relating to their assessed work and staff were often described as approachable, for example:

B3F P J01 Lines 155-164

- I And you were saying the demonstrators were quite helpful in the labs. But generally if you want help can you get help from people, like the lecturers or ...?
- M [...] The last semester they were helpful. [...]
- F1 I'm sure if we sent them an email saying can you explain this to us then they would.
- F2 They all supply their email address and tend to say at the beginning of their lecture course 'oh if you have any problems you know, you can reach me at this email address'.

B1L P JN01 Lines 27-29

- M1 Well [the staff are] pretty easy to go to. You can go to their office and ask them questions and they're happy for you to do that.
- M2 [...] So I speak to the staff. [...] if I feel I have to go and speak to the lecturer, I go and speak to them. They might advise you to, they might explain it again, or they'll say, 'Oh I'll go over it in a tutorial' or, you know, 'I'll give you more information here and there or I can go over it right now.

It was also common for the students in the final year course units to describe having at least some elements of an understanding of what was expected in their assessed work, as exemplified by these comments from students on the B1L course unit:

B1L P V01 Lines 134-140

- F1: The other coursework [...] I would say it is quite well laid out. Like, when we got that as coursework it.. when we got the title and it was broken down in logical areas that you could go into, or like if you wanted to go for a different, different tangent then you could [...] his coursework was set out quite well and if we needed help then it was there for us to take up.
- I: So would you say you feel kinda quite comfortable? You know kinda what's expected?
- All: Yeah.

In one course unit in particular, B2L, a set of interrelated aspects of guidance and feedback came together in such a way as to give the students a particularly positive experience. These findings were set out in earlier papers (McCune, Hounsell and Nisbet, 2003; McCune and Hounsell, 2005) thus the findings are only briefly summarised here. B2L was assessed solely by a 3-hour examination based on essays. To help the students prepare for this examination, the module coordinator had put together a rich website for the course unit which included model answers and past exam questions. There was also a clear unit handbook which included learning objectives and relevant references. Further, the students seemed to be clear about the format of the examination, which made it easier for them to understand what they would need to do by way of preparation. Prior experience of examinations with similar formats and a sense of understanding the nature of the increased demands made by the upcoming examinations also seemed to contribute to their confidence.

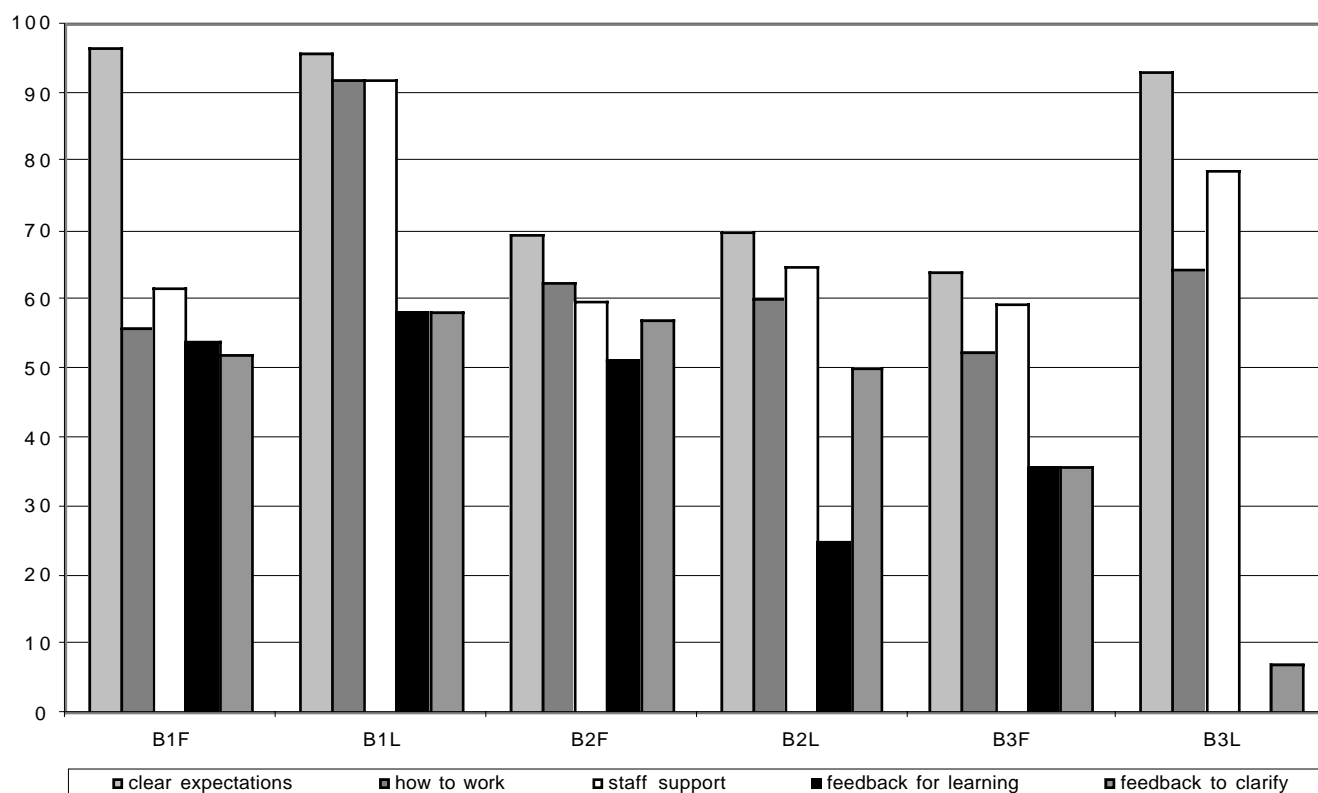
What seemed particularly helpful for these students, however, was that there were excellent opportunities within the course unit for *intrinsic* feedback (Laurillard, 2002). In other words, feedback which is embedded in day-to-day teaching-learning activities and arises spontaneously and integrally in student-tutor exchanges (Laurillard, 2002). In B2L, the intrinsic feedback was available within the in the problem-solving sessions, which formed part of each class in this course unit. In these sessions, students had gained repeated practice in tackling problems grounded in authentic data, and were able to check out answers with one another and with staff.

4.6.2 Item-level analysis of ETLQ data relating to guidance and feedback

Before considering the remainder of the interview findings relating to pre-assignment guidance and feedback, a more detailed analysis of the most relevant questionnaire items is provided. The ETLQ asked students to respond to several items on guidance and feedback on their set work: on the clarity of what was expected in the assessed work, on whether they were encouraged to think about how best to tackle the set work, on whether staff gave them the support they needed to complete the work, on whether the feedback they received helped them to improve their ways of learning and studying, and on whether the feedback helped them to clarify things they hadn't understood.

The responses are given in detail in the Appendix (Table 1) and Figure 3 below shows the responses of students in each course unit to these items. In each course unit, students gave clarity of expectations the highest score. There was nonetheless a substantial minority in several course units who indicated that they were not clear about what was expected in their assessed work. The students also tended to have positive perceptions of the support they received from staff and the encouragement they received to think about how to tackle their assignments. The students responded less positively to items asking about the feedback they received and how this helped them improve their learning and studying or understand better.

Figure 3: Perceptions of set work and feedback (per cent who agreed or agreed somewhat)



4.6.3 Students' perceptions of shortcomings in the advance guidance given about assignments

Particularly in course units B2F and B3L, and to some extent in course unit B3F, the students described limitations to the advance guidance they were given about what was expected in their assessments or what it would take to receive a good grade for a particular piece of work. In B2F all of the student interviews included comments from students that they felt that they had received insufficient guidance about some part of their assessed course work. Two of the assignments which the students had been set had caused particular difficulties. One was part of an exercise on 'The Pertussis Enigma', focusing around survey data on vaccinations for whooping-cough (pertussis), and the assignment required students to draw up 'best-practice' recommendations for general practitioners on the use of the pertussis vaccine. The second assignment stemmed from a practical on mammalian circulatory and respiratory systems, and posed questions about the circulatory system of a vertebrate:

B2F P D02 Lines 144-145

S5: [. .] For the pertussis enigma [assignment], I totally got the wrong end of the stick. [. .] I read the instructions, and I felt there were hidden things that you had to put [in] that they didn't explain.

B2F P V05 Lines 43-44

S1 - the worst part about [the course unit] I think was one of the reports we've just done [...] I don't think it was explained very well what they were looking for or what they were wanting [...] So I was on the net, dig through all the books, to internet, got a specialist book out of the library on fish circulatory systems [...] it wasn't 100 percent clear what we'd do to do. [...]

S2 - It was very very unclear [...] it was really badly explained and I went on looked in my textbook, read like the whole chapter, looked on 230 sites on the internet, and got [...] only half of what I was looking for.

As reported by McCune, Hounsell and Nisbet, (2003 and McCune and Hounsell (2005) there were also concerns about assignment guidance in B3L. Students in two of the three interview groups expressed uncertainty about what was expected in the two essays which they were due to complete by the end of the semester. A lack of prior experience of writing essays, together with a perceived paucity of feedback on those essays which had been submitted for other modules, also contributed to their uncertainty. While the students indicated that they were more satisfied with the guidance they had been given about their oral presentations for the B3L course unit, there were indications in all three interviews that some of the students did not have a clear grasp of the criteria against which their presentations would be assessed.

4.6.4 Concern about limited, variable or untimely feedback

Most of the interviews from course units B2F, B3F and B3L included extracts where students expressed concern about the limitations of the feedback provided on aspects of their assessed work. In B2F the students made particular comment about lack of feedback on the pertussis assignment, which was related to their concerns about insufficient initial guidance on that piece of work. In a continuation of the extract on the pertussis enigma assignment, presented above, the students commented that:

B2F PD 02

S5: And I got 8 out of 20, and I've got nothing written on my [feedback] sheet at all.

S3: Mine's the same. I got 10, and it's got NO comments on it whatsoever.

S5: And they tell you to do it in double-spacing, so they can write things in, but they never do .

S3: I mean, if we're getting half marks, it must have a lot wrong with it . . [S5: Exactly.] But it's not telling us anything.

There were also comments in a number of interviews from B2F which indicated more general concern about lack of feedback, or variation in the quality of feedback given by different markers. This broad

picture of concern about limited or variable feedback was also expressed across all of the interviews in B3F. The students quoted below also questioned whether the comments which were written on their work were really intended for their benefit:

B3F PD 01, lines 292-316

- S1: We write the thing, hand it in [S: Yeah] and we get it back with a few comments on [...] Mainly spelling mistakes. [Laughter][...]
- S3: It's postgrads [who mark the work], and it's quite, sometimes inconsistent. [...]
- S2: — It's very inconsistent. [S: Yeah]. And also, I don't think that they are marked for us. They are marked for them. [...] I don't think they are writing in the margins so we will know not to do it again. They're writing it in the margins so they will remember that we've done it wrong when they add up the marks, I think. It isn't done as a feedback [exercise?].
- I: Can you give me an example of what you mean?
- S2: Well like, if you've written something that is wrong [...] then they'll underline it in red and put a —
- S?: — a question mark, with a bracket.
- S?: Oh, that's a classic one.
- S2: They won't say, 'You should have put blah blah blah'. They will just say 'This is wrong', reference that they know you've done it wrong.

As illustrated by the questionnaire analyses reported earlier, and as reported in previous papers (McCune, Hounsell and Nisbet, 2003; McCune and Hounsell, 2005) feedback was rather more problematic for the B3L students than for those in the other final year course units. The B3L students were not expecting to find out what mark they would be awarded for their oral presentations, which formed part of their assessment, until after their exams. Further, although their presentations had typically been positively received, there was little or no accompanying feedback offering fine-grained comments on the quality of their presentation. Given the concerns indicated by the students on the B3F course unit, delivered by the same department, the possibility arises that lack of feedback was an issue within the department more generally. This possibility seemed to be borne out by some of the comments made by the final year students in B3L about assessed work prior to the B3L course unit:

B3LP D01 157-186

- S: Yeah, one thing it seems to be like apparently in all the modules we do, the feedback on the things we do doesn't sound very good, I don't think. [...]
- S: Or there isn't any! [laughter].
- S: Especially in the exams we'll just get a percentage (S: Yeah). There will be no feedback to how people answer the exam [...]
- S: It's really annoying!
- S: And the same with practical reports, the same with essays as well, and probably the same with the seminars as well - we'll just get mark and that'll be it.
- I: The same with essays?
- S: Well, we get the essays back and they're corrected but there's not really ...
- S: Well they used to give you a mark sheet and it's got, like, structure, bibliography [...]
- S: It's a tick sheet. [...]
- I: That's it? What about the comments?
- S: Few and far between. Definitely.
- S: It definitely depends on the em, who's marking it though. Some will just put 'very good' 'liked it' or some will put reams and reams of text [...]

Timeliness of feedback was a particular concern for certain students participating in the B1L course and was occasionally mentioned as an issue in other settings. The B1L students were not expecting feedback

on their coursework assignments until after the end-of-module exam. The levels of concerns about deferred feedback were especially apparent amongst the MSc students taking the course unit. These students were new to the institution and, unlike their BSc counterparts, had no past experience of feedback in the department to draw upon and were understandably anxious to know whether they were operating on the right lines. (In the following extract both of the students are MSc students).

B1L PJN 02 37-39

S2: I've never done any coursework in English, so I hope if I can get any feedback, it's what part is insufficient, or structure, or language, that it will tell me how to improve. Not just grades, but to know where I can improve it and how. That's what I want to get.

I: (to S1). Yourself?

S1: I probably want something similar, really, telling you exactly where you've gone wrong. Actually, instead of telling you where you've gone wrong, how you could actually improve.

4.6.5 The value attached to feedback by students

Given that providing feedback on students' work is demanding of staff time, it might reasonably be asked whether students are likely to make good use of such feedback where it is provided. There are various methods (see for example, Hounsell, 2003) by which students can be encouraged to better engage with feedback but what concerns us here is the response of the students interviewed to the feedback provided to them in the course units under study. There were comments from students across several of the course settings that feedback was valuable to them, for example, to give a sense of how they were progressing or to help them to understand how to improve their grades or the quality of their work, as illustrated in this extract from B2F:

B2F P D02 Lines 369-375

S5: Assignments should be explained better, and there should be more feedback. (Others: yes, definitely feedback). [...]

S5: - 'Cos that's the only way you can really improve yourself, if you know what to improve yourself on, and which parts [to improve].

That said, however, there were a few examples in our data of comments from students which indicated that they would not always be well motivated to engage with feedback. In the example below the students discuss the value of feedback but the student who speaks towards the end of the extract points out that she would only be interested in feedback in certain circumstances:

B1L P JN03 Lines 60-73

F [...] So sometimes you don't even get feedback and it's just waiting for your overall grade for the module [...] To see how well you've done. Which is quite bad actually.

M1 Yeh, it is, because you need some sort of gauge, before you go into your exams, of how well your doing, you know, because if you know you're doing really badly, then you've still got time to get help.

F Yeah

M1 And, if you're doing well, then you know what you're doing's right[...]

I If it was just a grade [and no feedback on your work], what would you do?

M1 Go and see. Go and see and ask him to explain it [...]

F I think it would depend on [...] what the grade was. I mean, if it was a good grade then I'm not bothered, just go and focus on what I'm doing, or if it was a bad grade that I'd done really bad and I knew I was expecting that, I wouldn't bother going and asking for any feedback[...]

Some students also indicated that their level of motivation would influence how much they sought or used feedback on their assignments. The student quoted below also draws attention to the contextual constraints of how feedback in B2F was provided on some set work:

S [...] Basically the only feedback we usually get is on a notice board at the back of the lab and that's OK but the majority of students once they've got their mark back can't really be bothered going up and looking and saying OK maybe I should have done that [...] And I know the staff will argue and go well if you were that interested you should have went up and looked but when there's say 45 students in a lab and they've just been in a lab for 3 hours the last thing they want to do is go up to the back and look at where they've went wrong [...] in a standing position, looking at a notice board taking notes. I think possibly a feedback sheet would be more helpful [...]

The importance for students of feedback on their work can also be seen indirectly in their emotional reactions to perceived shortcomings in that feedback. Although it was not a particular focus of our interview schedules, students in several of our course settings spoke strongly about the affective consequences of problems in this area. These included the suggestion that poor feedback indicated the marker did not care about the student, or that the student felt frustrated, annoyed or disappointed. For example:

B2F P V03 Lines 85-86

S1: It can be quite frustrating [...] if you know you've worked so hard on something and then you get it back and it's a bad mark for it and then as if no one really cares that you got that mark –

S2 It kind of lowers your confidence a wee bit -

S1: It does -

S2: You're like, hm, I put all this effort in what's the point ...

B3F P D01 Lines 319-326

S1: If you repeat the error they'll put it up every single time. Just because you've put something in capitals when you shouldn't have, or something like that.

S2: They're not very objective. Once I had a graph, and I hadn't written something on it, and I mean it was scribbled on like the whole - I had writing from here to here on it. It was just massive 'This is wrong', you know. This kind of thing. And that's really, you know, really bad [...] and it didn't make me feel great [laughter], that they'd scribbled all over my lovely graph.

By contrast, in the extract below the student indicated that lack of feedback had provided motivation to work harder. The student did not, however, seem to have a clear idea about where to direct these efforts.

B3F P V01 Lines 37-51

S2: We don't really get feedback [...] even in like course work you just get a mark and maybe a couple of ticks [...] or 'put this in capital letters instead' or something, and that would be it [...] I think in a way it might have motivated me personally a bit because it's just made me try a lot harder, like especially course work. it's made me try a lot harder at course work. [...]

S1: But how did you know what areas to improve?

S2: I didn't really, I just threw everything in and hoped something would be okay.

The value of guidance and feedback for first year students in particular comes through in their comments about additional support they would have liked. In the majority of the interviews with first year students there were extracts in which students indicated a wish for additional support on their assessments beyond being given clear advance guidance about what was required of them. The forms of support desired included further guidance about where in the literature to find relevant material, model answers for assessments, or examples of good work by another student. Regular face-to-face guidance about assessed work was also mentioned, as illustrated in this extract:

- I: What would you most like to see changed, in the module?
- S: Maybe if they could give you more help with the assignments, and maybe a bit more feedback. You could have a monthly meeting with someone, to speak to you about Biology. You could have that with your Advisor if you made the effort, but I think a lot of people wouldn't tend to. You're probably better having like a tutor or something, maybe just there, every month, to say to you, 'How are you getting on, how are you finding it?', 'This is what was wrong with this assignment, this is what wasn't'.

Some students also felt they would benefit from revisions sessions - including advice about examination technique - or practice tests, as preparation for examinations. There is perhaps a sense, in both the extract above and the one that follows, that the students were struggling with the level of responsibility they had been given for their own learning early in their university careers.

- S1: Yeah if they'd tell us to do some questions and go through it, then that would be quite constructive and...
- S2: I mean, they should actually do that [...] they should really go back to stuff that we did at the beginning, at the start of term. When did we do that, like, what, February? Long time ago. [...] They should go back to it and just do like a kind of revision thing, and go through the main things and have a look at what people usually get wrong and go through it.
- S?: Or exam technique. [...]
- S4: [...]you find the papers yourself on the Internet, do practices if you feel like it, but nobody will mark them [...]

4.6.6 Opportunities for one-to-one guidance and help with queries

Given the number of students expressing some desire for clearer, or additional, guidance or feedback on their assessed work, the question arises as to what extent the students perceived further support as being available. As discussed earlier, there were some data from every course unit to suggest that it would be possible for students to seek further assistance with their work. The onus was typically on the student to make such a request. Closer examination of the interview findings also reveal potential barriers to students seeking further advice in several of the course settings. These included comments from students suggesting that it can take time to develop the confidence to approach staff for help or that students may find it hard to approach staff if they do not feel they have some relationship with them, as in this example from B2F:

- S2: [...] but I do think that biology should have tutorials where you can actually go and ask someone and who you'll know from the beginning so you'll feel comfortable with. Because I think most people are dead kind of em what's the word? - S1: - Shy? - S2: - Shy and feel kind of ooh a bit nervous - S1: - Every one else knows it but I don't - S2: to see a lecturer but well not really that but if you have to go and see a lecturer you don't know, he doesn't know you, or she. You don't really want to go in and say, 'Hi I'm not understanding this' and most people - I know I don't feel comfortable - S1: Yeah - S2: I've not done that [...] In the labs [...] you've got your programme for the day that you're going to go over and you've got to do this, this, this and you can't exactly go in and say, 'Hi I don't understand everything to do with the digestive system'. You can't really [...] you can't sit them down and make them explain it to you in a lab it would just take too long [...]

Students from B2F also pointed out that the routes for seeking advice are less straightforward at university than in students' prior learning experiences. Again there is perhaps a sense in the extract below of the student having some difficulty in coming to terms with having more responsibility for their own learning:

- S [...] I think enthusiasm and motivation plays a big factor in it. If you're enthusiastic about it and you want to do well in this module then you will go and seek advice and you will go and ask the lecturers and you will go and ask staff what should be done and I suppose I have done that but it still is kind of difficult. [...] Also with us just starting university it's different from school. School you're in a classroom with a teacher, they tell you what to do, if you don't know what to do you can ask them as many questions as you like, whereas at university it's not as simple to do that.

Some students in B1L and B2F also pointed out that constraints on student and staff time may make seeking further assistance difficult in practice. A further issue for some students was uncertainty about the 'ground rules' for requesting additional support, as expressed by these students from B3L:

B3LP V01 126-135

- S1: I think you can ask [about the integrative essays] maybe I will go and ask him what he would expect [...]
- S2: Yeah, I'm sure most of these lecturers are quite approachable if you actually do go and get in contact with them but then there's a fine line — I don't really like doing that because there's a fine line between sort of pestering, annoying them or how much information you can actually get or whether because you got information from them they'll sort of down-mark you. I mean..
- S1: Yes?
- S2: No, I don't think that happens but, I mean –
- S1: Okay! [laughs].
- S2: It's a point though. I mean, you know I mean, everyone should have the same amount of help to make it fair otherwise what's the point?
- S1: Yes, that's true.
- S2: And if you've got people they do have people that they, you know, prefer more and will give more help to or if you go and ask them they'll be like really keen. So I, I'm not keen on asking the lecturers for help 'cos I don't really see that it's something that's particularly fair.

5. Staff Responses to the Baseline Findings

In the remainder of this paper, discussion focuses on two of the initiatives in depth, a first year unit (B2F) and a final year unit (B3L).

5.1 Course Unit B3L

As mentioned earlier in this paper, in the baseline data students in two of the three interview groups had indicated some uncertainty about what was expected of them in their essays. There were also comments in all of the interviews suggesting that the students were not clear about the marking criteria for their presentations. Concerns about lack of feedback had in fact been raised in all of the interviews, but these had applied to courses more generally in the department, rather than being specific to this module.

In the interviews with the two members of staff responsible for B3L, (which had taken place several weeks before the baseline findings had been reported to them), both had been ready to acknowledge that the provision of feedback and guidance on the students' presentations might usefully be strengthened:

B3LP L1 Lines 470-476

- I Do they get some sort of feedback on the presentation side of things?
- L.1 Well yes, at the moment, yes if they ask for it. I would like to institute a system whereby, when the class leaves, [L.2] and I sit down with them for five minutes and talk about their presentation.
- I That's a nice idea yes.
- L.1 And I think we ought to do that.

L.2 I made up an evaluation sheet. [The students] don't have it. It is just for my purposes. And it has on it – I am sorry I haven't got that in front of me but I think I can remember most of the aspects – the organisation of the talk, the presentation, the use of the literature ... [and critical insight]. That is four. I think I have five or six but those are the main ones I can recall. [...] And ... on the side I do ticks against people's names when they bring up a point in the post talk discussion which I take into account when we award marks for the presentation. They get added on, not subtracted but they get added on to their presentational marks.[...]

I: So if people are making a bit of an effort in the discussion ... ?

L.2: Indeed. That counts. But we don't tell them that.

I: OK

L.2: Perhaps we should.

In discussing with the research team subsequently how they might respond to the baseline findings, therefore, the staff were keen to consider possible ways forward. It was agreed firstly that feedback to students on their presentations would be given as a matter of course, rather than at the students' request, and that since feedback from staff was best given privately rather than publicly, it would be communicated to the two students concerned in the offices of one of the two staff shortly after the presentations had been given.

It was also suggested that feedback from the staff might fruitfully be enhanced with feedback from the students, but it was felt by the two members of staff that this should be done in as constructive a way as possible. Having explored various options, it was agreed that peer feedback would be invited using anonymous slips on which each student recorded one excellent feature of the presentation and one aspect on which there was room for improvement.

Thirdly, and more generally, it was also resolved to strengthen the guidance given to the students about how tackle both the presentations and the integrative essays, and about how these would be marked. This enhanced guidance would be given during the first meeting of the class and reinforced with a handout, in the case of the presentations, and through further class discussion, in the case of the essays.

5.2 Course Unit B2F

As discussed earlier, analysis of the baseline interview data for this setting indicated that the students did not feel they were receiving adequate advance guidance and feedback in relation to some of their assignments. Such concerns were also indicated in the quantitative data by a substantial minority of the students. It was not possible in the quantitative data, however, to separate out the students' perceptions of different assessed tasks as the items referred to the course unit as a whole. The 'Pertussis Enigma' task seemed to have been particularly problematic in this regard, as earlier interview extracts indicated. These student concerns had subsequently been confirmed in a scheduled staff/student liaison meeting.

In this particular course unit, it should be noted, there were no conventional tutorials with a regular tutor of the kind that were held in B1F and B3F. Instead, group-based activities and small-group discussions were built into the weekly practicals, in which a team of demonstrators, coordinated by the associate lecturers, supported students working in 'bench groups'. And given the size of the cohort (over 600 students), marking of practical exercises and coursework assignments – a very substantial undertaking – was distributed across a large and diverse course team. This could lead to problems of consistency of approach, as the associate lecturers acknowledged in a post-module group interview. Referring to the biggest of the formally assessed lab reports, on Human Energy Metabolism, they observed that although markers had been asked to annotate the marking schedule which was returned to the students along with their reports, some had not:

B2FP L.1, lines 105-107

SAL: And it's a bit frustrating when a student comes and says, "This says 'Excellent', [but] I've got 15 out of 20. If it's 'excellent', why haven't I got a higher mark?" ... And they're right. I mean, 15 out of 20 is 'pretty good'.

At the same time, however, it was recognised that there were practical constraints on how much additional support could be routinely provided, given limited resources:

B2FP L.1, lines 337-341

AL2: I would love to have the opportunity to sit down with the students after the assignments, and go over the assignments. I think that's the biggest thing that's missing, that there's no opportunity ... I mean, you put up a model answer, and if they read or not ... what do you do?

AL1: They can come and ask us, where they've gone wrong. And they know from the beginning, we tell them time and time again in the labs, there are model answers up in the locked cabinet in the lab. And they forget ...

AL2: Even then, I think the model answer sometimes isn't enough, because you need to address why the individual student's gone wrong. But in that case you'd need to do it in, like tutorials for ten people, so you'd be needing ten members of staff for every lab session, or something like that! Which is just completely ... [impracticable].

It was against this background that the core course team considered how best to address the students' concerns about guidance and feedback. One modification had already been agreed by the course team in response to discussion at the staff-student liaison meeting: that was to increase the attention paid to report- and essay-writing in the optional weekly Skills Workshops.

B2FP L.1, line 345

SAL: Something else that came up at the staff/ student liaison meeting was that they want more guidelines on how to write reports, how to write essays, and that sort of thing. [...] And I think [that] will play a bigger role in the Friday sessions. [...] You know, what they should include, what's a good introduction, what's a poor introduction, that sort of thing.

Two further measures were decided upon. The first was to complement the additional guidance to be given in the skills workshops by enlarging the guidance notes given to the lab demonstrators about advising students on assignments and assessments for the course unit. The second measure was to focus efforts in particular on the Pertussis Enigma exercise, which had been highlighted in the interview data as giving rise to student uncertainty and frustration. A structured marking and feedback pro forma would be devised for that particular assignment, working from the revised guidelines to demonstrators and an earlier marking scheme for that particular assignment). The course team already made use of a schedule of this kind in another assignment (the HEM lab report), but in this instance sought the assistance of the researchers with design options which could optimise marker consistency and encourage criterion-specific feedback comments.¹

6. Findings on The Collaborative Initiatives

6.1 Data Gathering

The data gathering process in the year in which collaborative initiatives took place was broadly similar to the data gathering in the baseline year. The student interview schedules were, however, slightly

¹ The development of these materials was subsequently reported by members of the course team as a case study for the SENLEF (Student Enhanced Learning through Effective Feedback) Project, and published on the Higher Education Academy website. (<http://www.heacademy.ac.uk/thematic/1346.htm>).

modified to place more emphasis on questions relating to the impact of the initiatives. Further, staff were not interviewed in the collaborative initiative year. A summary of the data gathered from the B2F and B3L settings is presented in Table 3.

Table 3: Data collection in the collaborative initiative year for B2F and B3L

	B2F	B3L
no. of students	630	15
LSQ	472 (75%)	14 (93%)
ETLQ	273 (43%)	13 (87%)
LSQ & ETLQ	226 (36%)	12 (80%)
group interviews	8	3
students interviewed	11	13

6.2 Analysis

6.2.1 Student interviews

For B2F and B3L a careful cross comparison was made between the pre and post collaborative initiative data to identify any differences in how the students perceived the support they had been given in relation to their assessed work that might be related to those aspects of the collaborative initiatives which focused on improving the advance guidance or feedback on students' work.

6.2.2 Student questionnaires

The scales and items from the LSQ were used to compare the pre- and post-collaborative initiative cohorts to identify any differences which might have influenced the students' perceptions of the teaching-learning environments on their course units. Item by item and scale level comparisons were made between the pre- and post-collaborative initiative data from the ETLQ to identify possible indications of impact of the collaborative initiatives.

6.3 Findings

6.3.1 B2F

The impact of this initiative was apparent in the qualitative, but not the quantitative, data collected after the changes had been put in place. The *ETLQ* questionnaire contains only general items about assessments and feedback and therefore it may be that the impact of any changes to the Pertussis assignment were not apparent against the students' overall perceptions of the support provided on all of their assessed work. In the interviews it was, however, possible to single out this particular task. In every interview after the collaborative initiative there were more positive comments about the guidance and feedback relating to this assignment, than in the pre-collaborative initiative year. Some illustrative extracts are given below for comparison. As far as it was possible to tell, from the baseline data collected using the *LSQ* questionnaire, the pre and post collaborative initiative cohorts of students were highly similar.

Pre-Collaborative initiative year:

B2F P V01 Lines 82-87

S1: I thought, well we didn't actually get much feedback on the actual marking of [the pertussis exercise]. Cos like mine had no written comments on it at all and had 10 out of 20 or something which I wasn't too happy with.

I: So you didn't understand why you'd got that mark.

S1: Yeah, well no comments were on it at all [...]

Collaborative initiative year:

B2 FC JN02, lines 65-73; 113

S: Yeah. [...] I thought [the feedback on the pertussis assignment] was good because it had written comments and how you'd done in each bit. So it wasn't just a mark out of nowhere, you knew where you'd let yourself down, whether it was the presentation, or whether it was the content, or what.

6.3.2 B3L

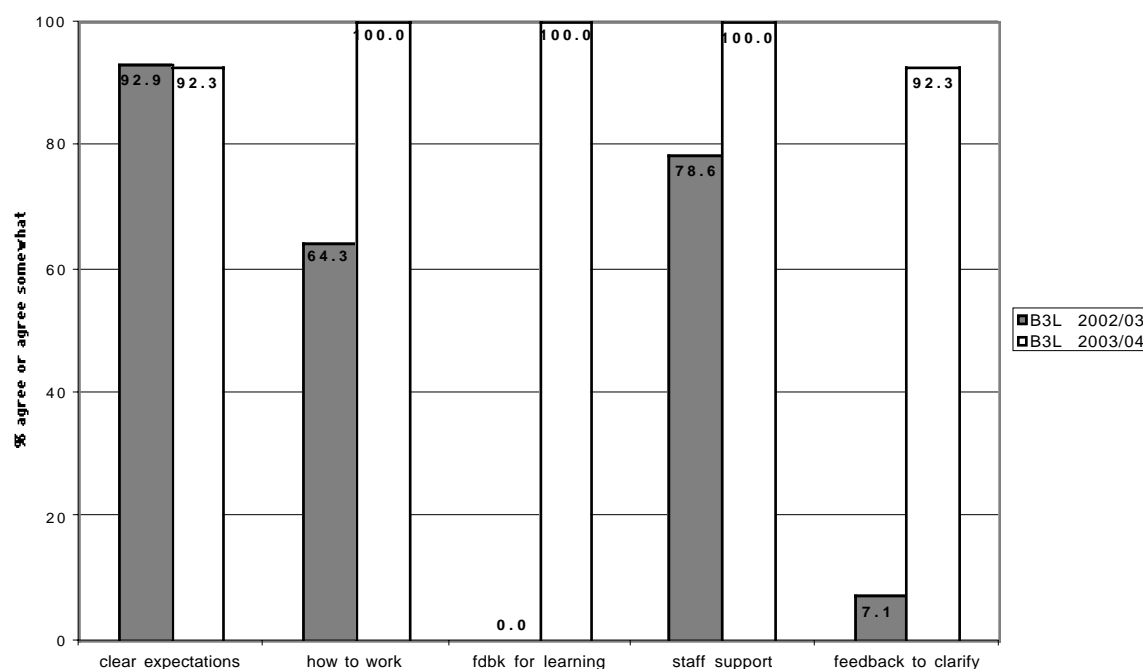
In the B3L setting there was evidence in both the quantitative and the qualitative data of the impact of the initiative. This was the case even though the two student cohorts were apparently highly similar, at least on the dimensions measured by the *LSQ* questionnaire given at the beginning of the course unit. Table 4 shows the mean scores on each of the *ETLQ* scales relating to the students' perceptions of the teaching-learning environment on B3L pre and post the collaborative initiative. The scores suggest that the students had even more positive perceptions of the course unit in the post collaborative initiative year, across all of the scales. The biggest improvement was on the 'clarity and feedback about assessment' scale, as would be expected given the nature of the collaborative initiative. The next largest improvements were on the 'alignment' and 'support from other students' scales. The latter effect may be due to the element of peer feedback in the collaborative initiative. The alignment scale measures students' perceptions of the integration between how they were taught, how they were assessed and what they were supposed to learn. It might be that the additional guidance given about the assessments contributed to the increase on this scale.

Figure 4 summarises the students' responses to the individual items in the 'clarity and feedback about assessment' scale. The improvement is really quite striking, particularly on items 35, 'The feedback given on my work helped me to improve my ways of learning and studying' and 40, 'The feedback given on my set work helped to clarify things I hadn't fully understood'. It is important to bear in mind, in relation to this data, that the students would not have received the feedback on their essays at the time the questionnaires were completed.

Table 4: Comparison of perceptions of the B3L module in 2002/3 and 2003/4

	Pre-collaborative stage			Collaborative stage		
	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>
Clarity and coherence	3.51	.45	14	4.26	.53	13
Choice allowed	4.36	.69	14	4.62	.62	13
Encouraging learning	3.67	.65	14	4.23	.42	13
Set work and feedback	3.31	.80	14	4.36	.38	13
Assessing understanding	3.75	.94	14	4.54	.52	13
Staff enthusiasm and support	4.18	.64	14	4.54	.63	13
Student support	3.61	1.11	14	4.73	.33	13
Interest and enjoyment	3.75	1.12	14	4.65	.32	13

Figure 4: Students' responses to items in the 'clarity and feedback about assessment' scale



The student interviews provided data which supported and elaborated on the questionnaire findings. The students in the post collaborative initiative group appeared generally to have more confidence in their understanding of what was expected of them in their assignments, as illustrated by in the interchange below about the essays which had puzzled the previous group of students. The same essay questions were used in both years, so this improvement could not simply have related to, for example, clearer wording of the essay question.

B3L, CJ 01 TEXT UNITS 265-313

S4 They have given us good guidance [about the essays]

S3 Yeah,

S2 Yeah, they did didn't they? [...]

S3 Yeah, one of them particularly, it's not really anything we can find references for [...] So, it's something we've really got to kind of think about, and draw on our knowledge of what we already know. So rather than just go away and find a paper to start with, we've sort of got to think about it first, and work out which direction we want to go in with it. [...]

I And what sort of things do you think it's going to be marked on?

S1 I think they'll look in your writing to try and see what level of understanding in general, of Biochemistry you have [...]

S2 You can probably try and put some of your own original ideas into it as well, cause they're quite, you can, as you said, interpret it, interpret it differently so it's probably quite a lot of that as well.

S1 Yeah, and you come to realise that they're looking for, the people who sort of, maybe come up with a novel idea, or you know [...] like an original, sort of technique or way of learning or something. [...]

The students in the post collaborative initiative group seemed to appreciate both the staff and peer feedback – the latter is illustrated in the extract below - although they differed in their views about how honest they felt their peers would be. The students generally felt that the staff and student feedback focused mainly on their presenting skills, whereas the class discussion helped to develop their understanding of the scientific content.

- I So do you think this thing with having feedback from the other students, is that a worthwhile thing? [...]
- S1 I think it is, cause then you realise, you realise what you did wrong and how you can improve it. It is actually really useful.
- S2 Especially from people that [...] you know, that if we do something blatantly stupid they'll tell us. It's quite good to get opinions from people who've been listening to you but not marking [...]

In addition to these changes in the way the course unit was perceived, differences between the students' typical approaches to studying for the subject area (as measured by the LSQ) and the approaches they reported taking to the course unit (as measured by the ETLQ) were slightly more marked in the post collaborative initiative year. The 2003/4 group showed a slightly greater improvement in the deep approach and a slightly greater decrease in the surface approach, as compared with the 2002/3 group.

7. Conclusions and Implications

7.1 Some Caveats

Given the focus of the present paper, it was necessary in reporting on the findings to concentrate rather more on certain shortcomings of the teaching-learning environments in the six course units than on their strengths. That being the case, it is important to reiterate that the students' overall perceptions of the course units were broadly positive, even before the collaborative initiatives were put in place.

In interpreting the findings presented in this paper certain limitations of the data collected and of the analyses should be considered. While we sought to identify course units which would represent the broad range of biosciences teaching-learning environments in the UK, it is important not to generalise too far from these six settings. One reason for caution in generalisation is that we were working with staff who had agreed to participate actively in a project focused on educational innovation and so it may be the case that their often high levels of interest in matters relating to student learning is somewhat atypical. Conversely, the short time span of the ETL project and the fact that we were working with isolated course units limited the extent to which it was possible to support [and monitor?] changes to the teaching-learning environments. Much greater impact may have been possible had we been able to work with whole departments over a more extended period of time. It is possible that greater impact might have been achieved had it been feasible to undertake the collaborative initiatives over a more extended period of time.

One limitation of our quantitative data is that the questionnaires were, by necessity, designed at the beginning of the project and consequently were not ideally tailored to measuring precisely the impact of each of the collaborative initiatives, the nature of which could not be predicted at the outset. In order to secure high response rates it was necessarily to present the ETLQ questionnaire in the penultimate teaching week of each course unit and thus some of the course teams' feedback on the students' assessed work would have been given to them after the questionnaire had been completed. In relation to the qualitative data, our analysis is still ongoing and it is possible that the emerging themes may undergo further refinement in later publications.

7.2 The Value of Feedback for Students

Given the pressures on staff time in contemporary higher education settings, it is important to be able to justify the potentially time-consuming endeavour of providing genuinely informative feedback to students on their assessed work. Our analysis of the value attached to feedback by students suggests that, at least in certain circumstances, students see their feedback as an opportunity to evaluate their progress and to identify how they might improve their work. It echoes the findings of a study by Higgins, Hartley and Skelton (2001) which portrays students as 'conscientious consumers' who are motivated intrinsically and seek feedback which will help them to engage with their subject in ways that will facilitate high-quality learning outcomes.

What little data we had relating to students' emotional responses to their feedback suggest that

shortcomings in the provision of feedback could in some instances have quite negative consequences for students' motivation. Further research would be needed, however, to fully explore this theme. A small number of the students interviewed indicated that there were circumstances in which they would not be well motivated to make good use of their feedback. This might be the case, for example, when they had received a high mark, or a low mark which was expected. This suggests the importance of attention to developing feedback processes which maximise the likelihood that students will see feedback as relevant. Comment-only marking would be one example of a means whereby this might be achieved (Black et al, 2002).

7.3 Complexity of Guidance and Feedback

In our paper at the last EARLI conference in Padua (McCune, Hounsell and Nisbet, 2003), we had observed that the students' concerns about feedback were not confined to a desire for improved feedback comments, but could instead span a cluster of interwoven issues including guidance about tutors' expectations for set work, an understanding of assessment criteria and their application, the communication of marks and comments, and in some instances ground rules for advice-seeking. The present findings, which, draw on data from first- as well as final-year students, and from the post-collaborative as well as the baseline data, add further complexity to our unfolding understanding of guidance and feedback (c.f. Carless, in press). They indicate that account also needs to be taken of post-assignment opportunities for support in addressing weaknesses identified in feedback comments, and of the inherent challenges in pursuing consistency in guidance-giving and commenting across a large and diverse course team.

The findings might also be taken to suggest that enhancing the provision of feedback and guidance to first-year students is inherently more difficult to achieve than it is with final-year students. And while the limited scope of our data would call loudly for caution about any such inference, it would not be surprising if it were to be borne out by studies elsewhere. First-year students are generally likely to be more heterogeneous in their backgrounds and more uncertain about what is expected of them as undergraduates than their final-year counterparts. And the typical substantial differences in size as well as relative diversity between first and final-year cohorts – and by necessity, of the course teams concerned – tend to exacerbate the challenge.

7.4 Evidence-Informed Pedagogical Change

Finally, in what ways can these findings contribute to an understanding of the nature and potential of evidence-informed pedagogical change in higher education? First and foremost, it needs to be emphasised that the approach taken was collaborative, contingent and grounded in local practices. Rather than being externally imposed or following an inflexible template, the initiatives determined upon and monitored addressed concerns which had emerged from the baseline research data but were also in accord with the course teams' own perceptions and soundings from the students. (Strictly speaking, then, the initiatives taken might most accurately be termed 'evidence-enriched' rather than simply 'evidence-informed'.) They were also initiatives which the course teams concerned had considered worthwhile and practicable within the limited resources available to them. Moreover, the research team sought to help the course team identify strategies which were in harmony with and built on existing practices and ethos. Thus the initiative in B3L, for example, sought to take account of the tutors' concerns about privacy, in giving oral feedback, and about the desirability of involving students in offering feedback to their peers in ways which would be seen as constructive and supportive, while in B2F, the marking-and-commenting pro forma was a tailor-made development of a lab marking schedule already in use elsewhere in the module.

We would also argue that since the initiatives were pursued through consultation and interchange and were contextually grounded, they represented the kind of evolutionary change that is more likely to be sustainable in the longer term. And ironically, the relatively truncated time-frame which the research design had necessitated (and which in turn had limited the scope of the changes that might be entertained) may have also been advantageous in this respect, since it helped to ensure that the initiatives were neither intrusive nor notably burdensome or disruptive.

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Appendix

Table 1: Perceptions of set work and feedback

	B1F	B1L	B2F	B2L	B3F	B3L
clear expectations						
agree (%)	38.5	50.0	28.0	50.0	20.9	42.9
agree somewhat (%)	57.7	48.8	41.3	20.0	43.0	50.0
unsure (%)	1.9	4.2	5.9	15.0	12.8	0.0
disagree somewhat (%)	1.9	0.0	17.0	15.0	23.3	0.0
disagree (%)	0.0	0.0	7.7	0.0	0.0	7.1
how to work						
agree (%)	13.5	41.7	15.9	25.0	7.0	28.6
agree somewhat (%)	42.3	50.0	46.5	35.0	45.3	35.7
unsure (%)	13.5	0.0	8.9	20.0	12.8	14.3
disagree somewhat (%)	28.8	8.3	23.6	20.0	33.7	14.3
disagree (%)	1.9	0.0	5.2	0.0	1.2	7.1
staff support						
agree (%)	9.6	37.5	14.0	30.0	17.4	28.6
agree somewhat (%)	51.9	54.2	45.8	35.0	41.9	50.0
unsure (%)	21.2	4.2	10.7	30.0	20.9	0.0
disagree somewhat (%)	11.5	4.2	24.7	0.0	15.1	14.3
disagree (%)	5.8	0.0	4.8	5.0	4.7	7.1
feedback for learning						
agree (%)	11.5	25.0	16.6	20.0	7.0	0.0
agree somewhat (%)	42.3	33.3	34.7	5.0	29.1	0.0
unsure (%)	19.2	41.7	8.5	55.0	20.9	50.0
disagree somewhat (%)	17.3	0.0	28.4	15.0	32.6	28.6
disagree (%)	9.6	0.0	11.8	5.0	10.5	21.4
feedback to clarify						
agree (%)	11.5	25.0	14.0	30.0	3.5	0.0
agree somewhat (%)	40.4	33.3	43.2	20.0	32.6	7.1
unsure (%)	21.2	37.5	8.5	35.0	20.9	64.3
disagree somewhat (%)	13.5	4.2	21.4	15.0	34.9	14.3
disagree (%)	13.5	0.0	12.9	0.0	8.1	14.3

Table 2: Comparison of perceptions of the B3L module in 2002/3 and 2003/4

	B3L 2002/03	B3L 2003/04
clear expectations		
agree (%)	42.9	53.8
agree somewhat (%)	50.0	38.5
unsure (%)	0.0	7.7
disagree somewhat (%)	0.0	0.0
disagree (%)	7.1	0.0
how to work		
agree (%)	28.6	38.5
agree somewhat (%)	35.7	61.5
unsure (%)	14.3	0.0
disagree somewhat (%)	14.3	0.0
disagree (%)	7.1	0.0
feedback for learning		
agree (%)	0.0	53.8
agree somewhat (%)	0.0	46.2
unsure (%)	50.0	0.0
disagree somewhat (%)	28.6	0.0
disagree (%)	21.4	0.0
staff support		
agree (%)	28.6	30.8
agree somewhat (%)	50.0	69.2
unsure (%)	0.0	0.0
disagree somewhat (%)	14.3	0.0
disagree (%)	7.1	0.0
feedback to clarify		
agree (%)	0.0	23.1
agree somewhat (%)	7.1	69.2
unsure (%)	64.3	0.0
disagree somewhat (%)	14.3	7.7
disagree (%)	14.3	0.0