

# Electronic Feedback from students: a mixed blessing?

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## Abstract

Now that feedback from students is increasingly collected electronically rather than by paper, there is a need to investigate how electronic systems can best be used for different feedback purposes. This paper reviews the practice of electronic feedback, identifying some of the issues that arise when it is used in various situations. These include the effects upon content, the need for anonymity and the possibilities for going beyond present uses. It also reports on experience of using and testing electronic feedback at both the module and institutional level. Results are presented for a module comparing electronic and non-electronic methods. At institutional level the effects of replacing an annual university student satisfaction survey with an electronic one are described.

**Keywords** electronic student feedback survey evaluation

## 1. Introduction

It is now routine in universities to gather feedback from students on how satisfied they are with their education. Students are asked for their views on many aspects of their courses, from their response to individual modules (or even sections within a module) to their final assessment of their course as they graduate. Until recently opinion was always gathered by paper-based questionnaires. Now there is another option – to use an online survey or some other electronic means. Superficially, there seem to be obvious advantages to adopting a technological approach. Online systems for feedback save physical resources, save time, are more secure and allow results to be processed more readily, say their proponents. Yet the comparatively slow rate of adoption of such methods would indicate a perception that there are significant issues to be addressed in ensuring their effective use.

Here we are investigating the appropriateness of online survey techniques for gathering student feedback in a range of different HE contexts. We are interested to establish what are likely to be the most effective ways of utilising online feedback in a variety of different situations. Although there is a sense of inevitability about the move to electronic feedback because of the increasing availability of institutional electronic infrastructures, there are still questions as to whether this will enhance the quality of the feedback, and make it more easy to collect. Questions remain as to what types of feedback can best be obtained electronically.

## 2. The Use of Electronic Feedback

Electronic questionnaires have been used in industry since the early 1980s, and one of the authors devised and programmed a major survey for IBM UK Laboratories in 1985. In this case, an anonymous paper alternative was provided, but few respondents chose this route,

and even their feedback was handled using the electronic survey software, as the most efficient means for clerical input.

## **2.1 Usage of electronic feedback**

The use of electronic means to replace paper questionnaires is undoubtedly increasing as shown in a survey of 500 US colleges and universities in 2002 (Hoffman 2003). In that survey, 45 percent of responding institutions were using, planned to use or were reviewing the option of electronic feedback for face-to-face courses. Interestingly the remainder had decided against electronic feedback at that time. A paper examining the attitudes of lecturers in one institution to changing from paper to online feedback (Dommeyer 2002) showed the majority preferred the traditional paper method. It may be that at the time attitudes were surveyed (2000) relatively few staff had experience of online feedback and were basing their response on little direct evidence. Nevertheless with the installation of electronic infrastructures to support teaching becoming the norm, we expect that in the near future most feedback will routinely be obtained from students electronically. Although still limited, there is a developing literature on electronic student feedback including an annotated bibliography (Johnson 2005) and an issue of the *New Directions for Teaching and Learning* journal (2003). In this section we consider issues that need to be explored as this electronic mode of feedback is introduced, before reporting on our own experience in the following section. The issue of cost, which has been extensively discussed elsewhere, is not considered here. Response rates from electronic feedback are almost always lower. From the reasons that have been reported for this we comment on only one here. It is noteworthy that a comprehensive investigation of response rates (Johnson 2003) established that the response rate will be higher (for self-administered electronic surveys) if students believe that staff pay attention to what is said in open-ended comments. This illustrates the importance of responding to feedback, whether electronic or paper-based.

Feedback from students about their satisfaction may be obtained for many reasons, of which two are predominant. One is the immediate improvement of teaching through the teacher learning how well material has been understood. The other is to have an oversight of teaching and of course delivery by finding the state of student satisfaction with a module or course. So electronic feedback may be sought in a range of situations from a single session in a module, through midterm and end-of-module reviews to course evaluations for graduating students and assessments of satisfaction with the institution as a whole. Here we concentrate on student satisfaction, but this can overlap with teacher understanding; for example the one minute method (see below) asks questions about understanding after a single session, but the responses may reveal a wider dissatisfaction. Rather than concentrating on the use of electronic feedback in one situation we look for those factors that are common across the whole range of use. We exclude from our discussion the use of student feedback to inform personnel decisions. This seems to be an integral part of student feedback schemes in the US but as yet this is not common in Europe.

We restrict our discussion to formal questionnaires. With student feedback systems, electronic and non-electronic, there is a division between the formal, manifested in questionnaires and staff-student committees, and the informal as lecturers communicate face-to-face with students. It may well be that the informal is just as important as the formal in assessing student satisfaction (Rush 2006). Technology offers significant opportunities for informal contact between lecturer and student – email, discussion boards, blogs, chat rooms etc. Much of this informal contact does in fact leave a record that could be analysed to assess student satisfaction, using tools such as content analysis software, but this does not seem to have been done to any great extent.

## **2.2 Effects of a change from paper**

An important question is whether a change from paper to electronic questionnaires, in itself, affects the content of the results. Dommeyer et. al. (Dommeyer 2004) in an extensive test found that online evaluations of teaching performance (not quite the same thing as feedback, as we have indicated above) do not give significantly different mean scores than paper based evaluations. Hardy (Hardy 2003) found online ratings that were higher and lower than paper

ratings. No statistical analysis is reported but the differences seem small. However Gamliel et. al. (Gamliel 2005) whilst finding similar mean scores using different modes, also found greater stability using paper-based methods twice than the stability when using different methods. This effect may be due to the visual presentation of the questions. Thus it seems that the mean response to closed questions is not significantly affected by a change from paper to online feedback, but the issue of stability warrants further investigation. Hardy also found no difference when assessing the content of responses to open questions by classifying them as positive, negative or mixed. By contrast, the length of responses to open questions is widely reported to increase (e.g. Reed 2004, Hardy 2003, McGourty 2002). At first sight this is a significant result in favour of electronic feedback. Paper responses are seen as being written in a desultory fashion as students hurry to complete the questionnaire and leave the class. But such paper responses can not be compared directly with electronic ones. In the studies reported here, electronic feedback was obtained by students completing the online questionnaire outside of class, in their own time. The questionnaire was self-administered with the likelihood that those students motivated to complete it would spend longer on it than the limited time available in class. We may speculate that the length of replies is determined not by whether the questionnaire mode is paper or electronic but by circumstances such as the time available. Another factor will be the extent to which students are encouraged to give full answers by the instructions and attitudes of the staff administering the questionnaire, and by their experience of the attention paid by staff to past comments.

### **2.3 Anonymity and confidentiality**

There are several questions associated with the issues of anonymity and confidentiality. It is an almost universal assumption that student feedback should be anonymous. This is to remove any suspicion in the minds of students that adverse comments on lecturers will lead to lower grades. It is obviously important that students believe they can trust the impartiality of lecturers when marking. There is a cost though if obtaining this trust is at the expense of information content. Anonymous replies will contain no demographic information, so a potential source of data is lost. There is no way, for example, of correlating feedback response with student performance. This assumed need for anonymity applies to both paper and electronic feedback modes, so can not be used to differentiate between them. Rather the issue is whether anonymity can be guaranteed for online feedback as it is with paper feedback. This is problematic with present systems. It is usually possible, albeit in some cases with great effort, to identify the person submitting a response. Even if this is very unlikely, the existence of the possibility can affect student trust. A system that is truly anonymous can certainly be used, but this raises the converse doubt – are the responses valid? It could be that a student has submitted more than one response, or students not taking the course have responded. These possibilities need to be considered if the questionnaire is not administered in class. We now turn to consider some examples of the practice of electronic feedback in our own university.

## **3. Electronic Feedback in practice**

### **3.1 Electronic feedback within a module**

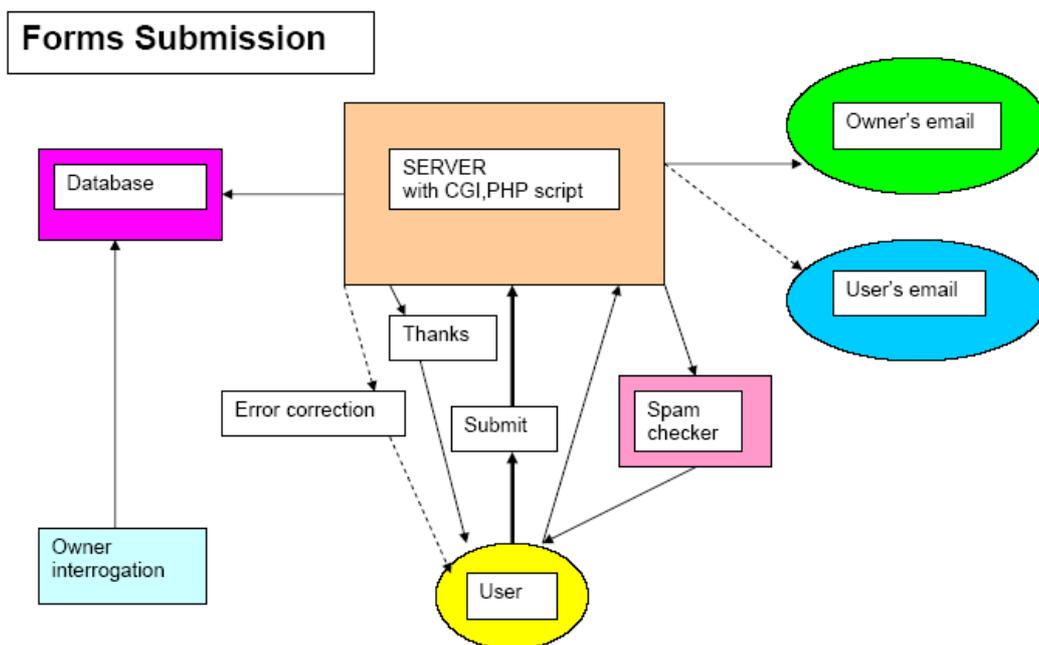
Student feedback is normally sought at the end of a module, but increasingly feedback is now sought during the module. The implications of using electronic methods are considered here. One aspect is whether changing to electronic means affects the content of the feedback. Another issue is the usability for this purpose of various electronic devices. These questions are now considered in detail.

#### **3.1.1 Experimental Method**

To investigate whether collecting feedback electronically has any impact on the views students express, an experiment was undertaken with a group of students taking a year one business module. The module's subject was computer applications in business. Feedback had been obtained for several years using the same paper-based end of module questionnaire administered during the last session of the semester. Such an in-class questionnaire inevitably gives high response rates, along with some protection against

“multiple voting” and collusion between students. The questionnaire included 6 closed questions about various aspects of the course such as organisation, teaching, assignment and so on, with responses invited on a 5 point Likert scale. There were also two open questions with responses invited to the questions: ‘what was good about the module’ and ‘what things need to be changed’. Since the paper-based questionnaire was well-established it was decided to use it as the basis of the experiment. The fact that the students were conveniently sited in a computer laboratory helped determine the design of the experiment. The paper-based questionnaire was translated to an electronic form, the format of which closely resembled that of the paper questionnaire. In each class (4 in total for the cohort), during the last session of the semester the students, sitting in the same computer laboratory, were randomly allocated between the paper and electronic forms of the questionnaire. The groups were treated identically in such matters as an explanation of the purpose of the questionnaire and the time for completion. The method of completing the electronic form ensured that the respondents were anonymous as were those responding on paper. The intention was that the only difference between the groups was the mode of questionnaire response. The split between the size of the paper and electronic groups was 37:32.

The method by which the electronic forms were processed is illustrated in Figure 1. This is a readily available commercial service where the user completes and submits a form prepared by the owner. For each submitted form a response email is sent to the user and a notification email to the owner. The form’s content is stored in a database for later interrogation. Other available functions are indicated in the diagram. The use of email is convenient for communication in this situation where the anonymous data is being held external to the institution.



**Figure 1 Structure of System**

### 3.1.2 Analysis

In analysing the results, a  $\chi^2$  test was completed, comparing the online and paper answers for each of the six module aspects questions, and no statistically significant difference was found between the two sets of answers for any question, agreeing with results reported elsewhere (e.g. Frazee 2003). No systematic investigation was undertaken of the difference in the length of the answers to the open questions, but an examination of the mean lengths revealed no evident differences, so the effect reported by e.g. Reed (2004) of longer answers to online

questionnaires was not found here. Presumably this was because Reed's students completed an online questionnaire out of class and so could take as long as they wanted. Our results are perhaps not surprising. It is difficult to see why changing the mode of answering would cause a student to change their answers to closed questions and the length of the response to open questions might be determined by the students' perception of how long they are expected to take in completing the questionnaire. It is the organisational aspects of questionnaire delivery, such as whether completion is in class and if out of class over what period it can be attempted, that may determine the length, if not the content, of responses. Another factor might be the capability of the respondents in handling the input medium, but here students had no perceived difficulty with the simple web form.

In the literature there are many studies of the effects of mode of delivery upon the answers obtained from questionnaires; see for example Dillman 2005 and Frazee 2003. The major differences are obtained when the channel of communication is different, for example between aural and textual channels. People may want to offer a response that accords with what they perceive to be the expectations of their interviewer when answering a direct question, whereas they have no such constraint when answering a question in a self-administered questionnaire. Such an effect does not arise when, as here, we are comparing surveys using what are essentially two self-administered textual questionnaires. However Dillman also demonstrated that the graphical layout may provide meaning for questions and hence effect the results. Admittedly some of the differences of layout in Dillman's experiment were large. In one case the comparison was between a linear layout with numbers and boxes for each category and a layout that required respondents to enter a number corresponding to their category choice. It was to minimise any such layout effects that the design of our paper and electronic forms was kept as similar as possible. This was easy to achieve on the simple form used here, but could be more problematic on a more extensive form.

Recently new types of interactive system have been introduced into the classroom. We can characterise these, speaking broadly, as falling into two classes – Electronic Voting Systems (EVS) and Classroom Communication Systems (CCS) (see Draper 2002 and McCabe 2003). EVS are usually based on handsets with a limited range of input options. They allow students to respond to multiple choice questions posed by the lecturer who can immediately display the results. By contrast CCS require an input device with the functionality of a computer i.e. a PC, PDA or tablet computer. Students can input text and see information such as questions and the results of class responses displayed on their own screen. The advent of these new devices raises questions as to how they can best be used for student feedback.

### **3.1.3 Other forms of module feedback**

So far we have discussed feedback at the end of a module but there are other occasions when we seek feedback. For example the One Minute method is a way of capturing feedback which is now becoming more widely used (Stead 2005). As initially developed it was paper-based. In one form the lecturer asks students at the end of a session to devote one minute to writing one sentence answers to two questions, asking what the student has learnt in the session and what they still do not understand. The feedback is elicited to help lecturers understand the effectiveness of their teaching and what immediate changes need to be made in course delivery. This feedback can easily be collected for small to medium size classes but since the essence of the method is speed, when using paper it can be difficult operationally in large classes.

Considering EVS for feedback within a module, we can see that their lack of textual input severely limits their utility. They cannot be used for the one minute method, the essence of which is text that may contain surprises for the lecturer and so could not be put in the form of multichoice questions. Multichoice questions might be used to gain a limited understanding of student response to the material, if the lecturer were able to predict the issues that would arise or wanted confirmation of expected responses. Turning to end of module questionnaires, almost all of them contain closed Likert Scale questions and open questions – see Quality in Business Education (QuBE) web site for detail on module evaluation (Szwelnik 2006). It is possible to envisage an end of module questionnaire administered by EVS the text of which is presented on paper with the responses to the Likert Scale questions being

given using the handset. Since the whole class would have to synchronise its answers question by question, the process would hardly be feasible. The capacity of CCS to take textual input means that they can be used for one minute method feedback and end of module questionnaires. Indeed the experiment reported above, although not using a full CCS, elicited end of module feedback as one might with a CCS. The authors have tried the one minute method in computer laboratories using ad hoc software that allowed anonymous feedback. In this case the time needed to activate that software, although relatively short, made the use of the method problematic.

#### **3.1.4 Summary**

The results of the experiment indicate that changing the mode by which feedback is gathered from paper-based to electronic does not in itself change the feedback. However several contextual factors can influence what can be achieved and the feedback which is obtained. The technology has the potential to provide comprehensive feedback frequently but as yet it has not achieved this.

### **3.2 The evolution of a University student satisfaction survey**

The University of Winchester has carried out an annual survey of student satisfaction since 1999. The aim was to get an institutional view of student satisfaction that would include the student view both of central services and academic provision. So besides questions on facilities such as the library, computing and catering, there have been detailed questions about assessment, feedback, support and so on. The questionnaire was designed following a preliminary focus group consultation which established those matters of most importance to students. These were then the basis of the questionnaire. Each year there have been changes as the University sought to address different issues and to improve the efficiency of the survey.

For the first three years the survey was completely paper based. Staff from Student Services would visit selected classes to administer the survey. This achieved a fairly high response rate. Certainly for the common questions relating to university wide facilities there was a completely adequate number of responses. There was a limitation as to the number of classes that could be surveyed and the result was that the response rate for some courses with smaller cohorts was not satisfactory. The transfer of the responses from paper to electronic form for subsequent processing was also problematic, as it was error prone and required significant amounts of labour. With this background a decision was made to move to electronic feedback. The impetus for the change was the arrival of a commercial online feedback service aimed specifically at UK HE. So in 2002, at about the same time as several other universities, the survey was moved to this online service. The opportunity was taken, in response to student comment about the paper based survey, to reduce the length and complexity of the survey.

The sampling for the electronic survey was very different from the paper based one, which had been targeted at particular courses. Now all students were invited to complete the online survey. The resulting response rate across the institution was satisfactory (helped perhaps by the usual prize draw), being rather similar to that which had previously been targeted for the paper survey. However some subjects and years, particularly for smaller courses, received few responses, in spite of course leaders being asked to encourage their students to complete it. On the other hand a far higher percentage of questions were answered than with the paper survey, in which questions were frequently left unanswered. Again we see the same effect of moving to online self-administered surveys, where students spend more time on completing their responses, but issues of validity are inevitably raised.

The procedures established in 2002 were continued for another 2 years but in 2005 there was a further change. It was thought that students might get bored at filling in a long form on a computer so the survey was split into two parts – an overall services one and a separate subject one. This was a success as the response rate was broadly the same for both parts. In 2006 it was decided to address the issue of low response rates from small courses. This

was done by reverting to a paper based questionnaire taken in to the classroom for a few courses for which insufficient responses had been received electronically in previous years. Thus the survey was for the first time mixed mode. Although there are methodological doubts about mixed mode surveys, this pragmatic decision did mean that survey results were obtained from small but significant sections of the student population. Another innovation in 2006 was the modification of the academic questions to bring them more into line with the National Student Survey (HEFCE 2005). It seems that once a survey is established electronically it is comparatively easy to change its form and content to meet new requirements which may be formulated as the result of external influences.

#### **4. Conclusions**

The experience reported here, from the literature and our own university, shows that electronic feedback is not an unmixed blessing. It will certainly provide one measure of student opinion and do so relatively cheaply and quickly, giving results that can readily be disseminated back to students. The evidence in this paper shows that if the methods of administration of electronic and paper based questionnaires are very similar, then the change from one to another will not affect the results obtained. But in practice, the change in mode is often, of necessity or of choice, associated with other changes which **do** affect the results. Perhaps the most significant such change is moving feedback activity out of a scheduled class, and asking students to give electronic feedback in their own time. This is likely to produce lengthier answers to open questions, but there will be doubts as to the validity of the responses. If responses are given without supervision and anonymously there is no guarantee that they have come from a member of the class and that no more than one response has been produced per student. Even if the response is from an identified account, there may be doubts as to its independence. One can envisage groups of students completing their online questionnaires as a group activity. Thus there will always be doubts about electronic responses.

In practice electronic feedback will become, where it is not already, the predominant mode by which feedback is obtained. This is because it fits well into an administrative infrastructure in which documents are routinely created and transmitted electronically. When this is the case it is suggested that the mode of surveys should, on occasions, be changed to confirm results or to get data not otherwise collected. An example of this was the University of Winchester's reversion to a paper based survey for specific courses when administering its student satisfaction survey. One can envisage a situation where a well-established online questionnaire, completed in the student's own time, seems to be giving questionable results. A possibility in these circumstances would be to change to a supervised online survey. In general if online feedback's potential is to be fully realised close attention must be paid to the circumstances of its use and results interpreted with caution.

The use of new technologies could potentially address the problems of paper-handling in collecting instant feedback during delivery of learning. However, devices such as electronic voting systems do not provide the textual input that is needed to address concerns not predicted by the tutor, so this approach has not been explored in detail.

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