

# Media-Enhanced Feedback case studies and methods

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Papers produced to support the Media-Enhanced Feedback event, Sheffield, 27 October 2010



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# Introduction

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The case studies in this publication bring together accounts of innovative practice by academics and developers in UK higher education in using emerging digital media technologies to provide engaging and effective feedback to students. Whilst the papers here highlight six apparently distinct technologies, they also demonstrate how such technologies can be adapted to address the particular requirements and situations of staff and students. The use of case studies, therefore, indicates what is possible. Audio Feedback, for example, has received much attention in recent years, especially since digital media technology has become more widely accessible to producers and users. However, every account of how audio feedback has been used is different. So once the essential idea of employing the recorded voice to provide personal, timely and meaningful feedback has been accepted, it is useful to look more closely at what people are doing: who is giving the feedback? to how many? in how much detail? to what effect? in what discipline? And how is this integrated with other content? Whilst it might be simpler to advocate a simple, common method to making audio feedback, its richness largely stems from the ways in which it can be used to address the different specific needs and contexts of staff and students. And this applies to video, screencast and smartphone feedback too. Indeed any kind of feedback.

Each case study is accompanied here by a more practical document intended to help readers move from a theoretical interest to one in which they can design and implement media-enhanced feedback to suit their own needs.

During the Media-Enhanced Feedback event, run in Sheffield on 27 October 2010, discussions revealed that practitioners were using or interested in other media too; media and technology not explicitly represented in these case studies. These included Web 2.0 technologies such as VoiceThread.com, a range of mobile phone apps, and audio embedded in more common media such as Word documents and Adobe Acrobat formats. This reminds us that media-enhanced feedback methods, and their associated technologies, will continue to change and in some cases disappear. Therefore, attention should be paid to the benefits of asynchronous, accessible digital voices, as much as the specific technical applications that are discussed here. This is demonstrated in these accounts: the recorded voice can extend the reach of academics and students over time and location; something that is often simple to do and usually highly valued by students and teachers.

edited by Andrew Middleton

for ASSET and MELSIG

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# Talking about writing: exploring the use of audio feedback in EAP writing classes

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## Aims and objectives

This case study reports on the findings of an action research project exploring how teachers and international students in an English for Academic Purposes context within the University of Reading perceive digital audio as a feedback medium. The focus on audio feedback was inspired by awareness of successful audio projects in the wider HE sector, such as the [Sounds Good](#) project, in which audio feedback has proved to be effective and friendly for students and efficient for teachers to deliver. The study set out to explore whether audio might be a more accessible feedback mode for students, and whether it might enable teachers to provide a richer layer of detail to engage students more deeply with the essay re-drafting process. Although this study involved a group of international students, its findings are of relevance beyond an EAP context to the wider HE sector, where the flexibility of digital audio is appropriate for both face-to-face and distance applications.

## Background

The original pilot took place across one term within the [ISLC](#) (International Study and Language Centre) amongst four writing teachers and fifty five students from the Middle East and East Asia, none of whom had any previous experience in using audio for feedback. In terms of their English ability, students ranged from an approximate IELTS level of 4.5 - 6.0.

Feedback is integral to the writing approach in the ISLC whereby students re-draft their writing in response to both peer feedback and detailed written feedback from the teacher. This process approach is designed to help develop independence as writers and editors, but in reality some learners, particularly those who are less mature or of a lower language level, still struggle to take full advantage of feedback given, despite the enormous time and effort teachers invest in providing it. This was the challenge we sought to address with our pilot.

## Methodology

Experimenting with audio is a low-budget affair, requiring only a laptop or pc and a portable digital recorder. An even cheaper alternative is to use a built-in or plug-in microphone and some free-to-download recording software such as Audacity. In addition to this basic equipment, you need a commitment to trying something new, in other words time. I was inspired to trial audio as part of my MA dissertation, and in turn motivated my colleagues by promising them support, training and any necessary resources. Students thought it sounded interesting and were keen to experience a new feedback mode.

We recorded audio feedback using a plug-in microphone and converted it to an MP3 file using [Audacity](#), which is free-to-download recording and editing software. We trailed the podcasting tool

within our VLE, which is Blackboard, to post the generic audio files, and the Grade Centre to privately post individual feedback. We also tried emailing individual MP3 files and this also worked well: the sound files were around five minutes in length.

Teachers introduced audio feedback to students in a staged approach across the term. Students first experienced only individual written feedback on their essays, then written feedback plus some generic (whole class) audio feedback, and finally, individual audio feedback with a significantly reduced amount of written commentary. In this way, students had written feedback against which to measure their experience of audio. Student response to audio was captured anonymously via online surveys and focus groups. Teacher response to audio was captured both informally during ongoing discussions about the pilot, and more formally via a survey at the end of the trial.

In addition to analysing both teacher and student response to the use of audio, samples of the audio feedback from each teacher were transcribed and then analysed in order to examine particular features of audio feedback. The purpose of analysis was to identify particular aspects in either the language or function of audio feedback which helped us to understand its success or otherwise.

## **Evaluation**

Supported by the text analysis, our measures of success were primarily learner satisfaction rates and positive teacher feedback about the practical and pedagogic benefits of using audio. In general, both teachers and students responded positively to the use of audio. The success of our initial trial is now further evident in the adoption of audio as a feedback approach by some members of staff within the ISLC, and an ongoing exploration of alternative and engaging feedback modes, incorporating the use of audio, video and screen capture. That these feedback approaches sit easily alongside more traditional written forms of feedback is testament to their flexibility.

## **Student response**

Students mostly found audio feedback to be especially friendly, detailed, helpful and motivating. The personal nature of audio appeared to resonate with students, so that the messages and advice within had real impact; students also had the impression that teachers cared greatly about them to take the trouble to provide personalised feedback. Perhaps most striking of all for this group of students, who were language learners, was that audio feedback provided them with extra listening practice as well as advice about their writing, and this double bonus provided a strong motivation to engage with the feedback.

## **Text analysis**

Analysis of the audio samples revealed some interesting features of spoken feedback which help to explain the positive response from students. We identified a high occurrence of elaboration and exemplification in the audio mode, whereby teachers give detailed explanations with specific examples to illustrate points made. In this way, they help the students know what to do with the feedback. Instead of a brief written feedback comment such as *'please provide examples here'*, the teacher might say something like: *'you need to provide one or two examples here – if you look at your lecture notes from last Wednesday I think you'll find some relevant examples to choose from'*. This type of commentary is invaluable for less confident students, it provides clear guidance and, during the re-drafting process, prompts action and decision making on their part in response to feedback given.

## **Teacher response**

Teachers were surprised by how easy the technology was to use, it is effectively 'pick up and go' in terms of the mechanics. More experimentation is required in terms of approach taken, and each teacher developed a slightly different methodology, such as how to locate the spoken comments within the essay, and how much to write on the essay itself. This was one of the issues we discussed at length: whether to write anything to accompany audio feedback, and if so, how much?

In relation to this question there are a number of other practical and pedagogical considerations when providing audio feedback. One of the downsides of audio is that students cannot easily 'skim' listen. It's therefore not easy for them to review their audio files and monitor their progress and development as a writer over a term or a year and yet this is a learning strategy we encourage. For this reason, we decided to provide a brief written summary sheet in addition to the audio commentary provided. Meanwhile, most teachers marked the essay in some way to help locate audio comments, for example, using a simple numbering system. Furthermore, whilst audio feedback proved most useful for commentary on meaning and rhetoric, some teachers continued to use written error correction symbols for simple grammar or spelling errors where it was more efficient to do so. Thus our dual 'audio plus reduced written' approach was not necessarily time-saving. However, there is a steep learning curve with audio and teachers mostly felt they were giving more and better feedback in the same time they would spend on written only, which was satisfying in itself.

## **Cultural issues**

This pilot was carried out with international learners, and we were aware of potential cultural differences which are worth highlighting here, at the risk of drawing stereotypes. A majority of learners were from the Middle East, many of whom have strong listening and speaking skills but are less confident with reading and writing. One of the incentives behind this pilot was indeed to find ways to better support such learners, by drawing upon their strengths. Culturally, these learners tend to be very comfortable with informal learning approaches, which is reflected in their positive response to audio. In contrast, many learners from East Asia expect to have a formal relationship with their teacher, as a result of which the personal and informal nature of audio feedback is unfamiliar to them, and may feel uncomfortable. Indeed, one learner found audio too personal and reported feeling 'shy' whilst listening to the feedback. We were also aware that many East Asian learners are more confident with reading and writing than with listening and speaking, and for these learners, listening can be a stressful activity. The ability to pause, rewind and listen again was clearly a significant benefit here, whereby learners were in control of the listening process themselves, in their own time.

## **Good practice and transferability**

The literature for both language learning and the wider HE sector is clear that we should vary our feedback approaches, using a judicious mix of approaches to engage learners and, importantly, to accommodate different learner preferences. Some learners are less comfortable with the predominantly text based medium in which we teach and learn, and for these learners, the provision of audio feedback is more than a novelty, it is an important acknowledgement of learner differences.

Whilst the applications of audio for distance learning are clear, the use of audio to provide better quality feedback on campus-based courses is equally valid. Audio feedback does not suit all teachers,

but there is, we found, a steep learning curve and it is worth pursuing beyond any initial awkwardness teachers might encounter. Neither does it suit all learners, but the flexible nature of audio means that teachers can even be selective about who they provide audio for, as well as when and how they do so.

We have found audio feedback to be useful for both individual and generic feedback provision, but EAP classes are generally small; clearly, individual feedback is less practical with larger classes. Here, audio can be used to create impact and support learners in other ways. For example, the answers to worksheets can be provided *and explained* via an audio file for students to check in their own time. Feed forward can be recorded about, for example, the next assignment, where the teacher can remind students about common errors in their previous assignment, and re-iterate key advice for their next one. Personal, clear and detailed messages such as these can really resonate with learners, and avoids repetition for the teacher.

A few final words of advice concern some practical considerations during recording:

- Aim to encourage good listening practice with your students. Remembering that useful feedback helps the learner to re-visit their work, we started each audio recording with such phrases as: *'This audio feedback relates to your essay entitled.... Do you have the essay in front of you, and a pen to make notes?'*
- Keep an eye on the time when you record your feedback. There is no ideal length for audio feedback, but aim to keep your audio files to a maximum of five minutes. It is easier for the listener to maintain concentration with shorter file lengths, and it will also ensure the sound files are easy to upload as podcasts within a VLE or website, or to send as MP3 attachments via email.
- Do not attempt to script your feedback if the recordings will not be re-used. Although editing using software such as Audacity is quick and simple to do, you will be missing the purpose of easy-to-use 'record-and-download' digital audio technology.
- Use the 'pause' button on your recorder; this is an invaluable technique as an alternative to scripting: press pause, take the telephone call, finish sneezing, re-collect your thoughts, and then continue recording.

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## **Resources:**

**Audacity** recording and editing software: <http://audacity.sourceforge.net/>

**Jodix** freeware converter (WMA – MP3) <http://www.jodix.com>

**MEL SIG** (Media Enhanced Learning) [http://ppp.chester.ac.uk/index.php?title=Main\\_Page](http://ppp.chester.ac.uk/index.php?title=Main_Page)

**Podomatic** <http://www.podomatic.com>

**Sounds Good** <http://sites.google.com/site/soundsgooduk/>



# About using audio feedback

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## What is it?

Audio feedback involves the use of digital audio to distribute formative messages, recorded for individual students or student groups, in response to ongoing or submitted work. It allows each student to develop their knowledge and the way they learn. It can take many forms, thereby addressing specific learning contexts. Audio feedback often features just the tutor's voice, but some models feature student voices, for example in self-assessment and peer assessment models.

## Why use it?

Feedback has several purposes including motivating students, informing them of their progress, and showing them how they can improve. It should be meaningful and timely (Gibbs & Simpson, 2004; Brown, 2001). Timeliness means more than just 'quick' however - it should be available for the student whenever they re-engage with the subject so that they can apply the advice (Middleton & Nortcliffe, 2009). However, turning meaningful written feedback around whilst the student is still engaged with the assignment can be difficult for the academic with responsibility for more than a few students; audio, on the other hand, can be delivered quickly, ready for the student to use when they need it.

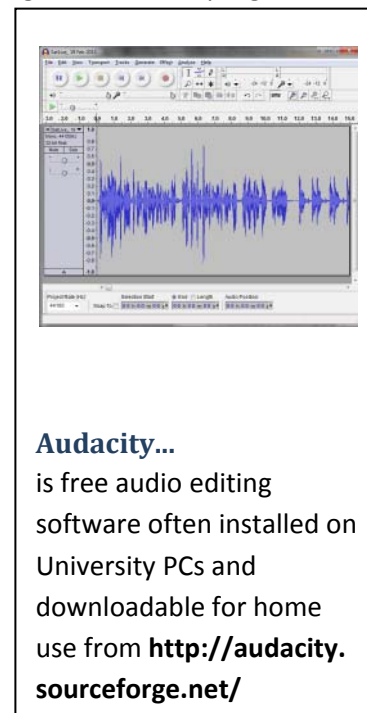
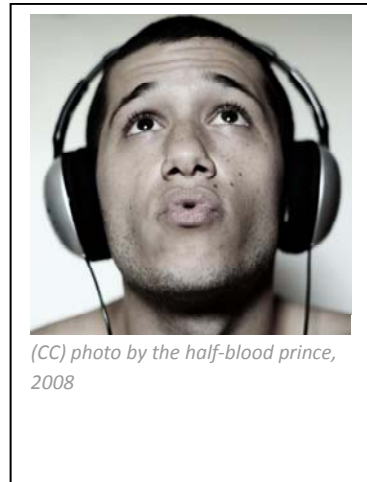
The meaning and care that can be communicated through the use of voice (Rust, 2001), its nuances and tone, is something that is difficult to achieve with other methods. This pastoral dimension (Rotheram, 2007) is particularly valuable where sensitive issues are being discussed.

Audio feedback files are not usually physically attached to the original work so care needs to be taken in making specific comments. Its design should also consider a broader context for informing learning beyond the original assignment e.g. connections to other modules, e-portfolios, etc.

Audio feedback is often formal in nature, but it can be easily recorded and applied to situations beyond those in which feedback would traditionally be sought or given.

## What's involved?

Technically, audio feedback involves the production of digital audio files. Recordings can be made either using PC software such as *Audacity*, or portable MP3 recorders for recordings that are transferred later. On Macs software such as Garageband is used by many for producing audio feedback. Once the recordings have been made they can be distributed, like other types of computer files, in a number of ways: VLE feedback tools, podcast feeds for generic feedback, email for targeted feedback, network storage areas and mobile applications.



Typically the feedback is short, highlighting and discussing particularly important points that can be addressed by the student to affect future work ("feeding forward"). It works well in combination with other, quick, objective feedback techniques like marking grids and marginalia. Some tutors, however, prefer that all feedback is in one format and one place, and note that audio feedback can cover more detail and can be faster to produce than text.

## Skills for producers and users

Producers will not normally edit audio feedback. The only exception to this is in models where a generic feedback stub has personal feedback appended to it (France & Ribchester, 2008). The main skills needed for audio feedback production are to do with designing the feedback itself, so that it makes the impact needed: this means it should be short, approachable and empowering, enabling the learner to take specific action and reflect generally on their learning.

### Some approaches

#### Personal tutor monologue

Recorded at the PC by the tutor as part of the marking process.

#### Personal feedback conversations

Recordings made by the tutor or student(s) in the lab or studio to capture formative project discussions or studio 'crits'.

#### Broadcast feedback

Also known as 'generic feedback', this is targeted at the whole cohort, though designed with each individual listener in mind.

#### Peer audio feedback

Peers constructively assess each other's work and learn by giving and receiving feedback.

#### Tutor conversations

Recordings of 'common room' feedback conversations that communicate tutor team thinking at a higher level.

#### Personal interventions

Timely feedback targeted at individuals to address emerging issues.

### 10 Tips

- 1. Introduce the value of audio feedback** to students beforehand.
- 2. Be clear about scalability and sustainability;** consider a pilot study.
- 3. Practice makes perfect,** get to know your recorder.
- 4. Include the student's name,** assignment title and date at the start of each recording. Name the audio files systematically so you can visually browse and organise them.
- 5. Keep audio feedback brief** and engaging. Be selective in what you choose to address so that it carries emphasis, with your voice conveying meaning. You may want to annotate the assignments, to provide feedback correlation.
- 6. Don't edit your recordings** - it will take too long. Restart the recording if you slip up.
- 7. Alert** -Put up a 'Recording! Do Not Disturb' sign if using in your office.
- 8. Blend approaches,** using each method according to its strength, e.g. audio and assessment grids for quick detail with breadth.
- 9. Use signposting** and reiterate key points as necessary. Either omit the grade or leave it until towards the end, to add emphasis.
- 10. Call to action** - tell students how they can improve.

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# Video for feedback case study

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## **The ASSET project, moving forward through feedback**

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## **Aims and objectives**

The aim of the ASSET project was to evaluate the available Web 2.0 technologies to support the development of an interactive feedback resource, 'ASSET', and to provide an innovative resource for engaging students and staff with assessment-related feedback within the University and across the HE sector through the use of video media.

## **Specific Objectives**

- To ensure that the ASSET resource follows open standards with the capability of being fully embedded within the University.
- To determine the most suitable Web 2.0 technology for 'building' ASSET.
- To explore the issues surrounding the use of video and audio clips as a mechanism for feedback provision from both staff and student perspectives.
- To embed the use of video as a core feedback resource for students and staff within the University.
- To disseminate information about ASSET within the University and across the wider HE sector, in particular to position the University as a lead institution in the development of interactive feedback resources.

## **Background**

The importance of assessment and feedback to the learning process is well known (Sadler, 1983; Biggs, 2003a,b; Gibbs & Simpson, 2004; Juwah et al., 2004). High quality and timely feedback can engage and motivate students and help them improve performance in subsequent assignments ('feed forward'). However, providing this type of feedback and maximising student engagement with it can be a real challenge. For staff, providing feedback can sometimes be very time consuming, repetitive and inefficient. From the student perspective, feedback may be provided in a manner which is deemed to be too late to be useful, sometimes unhelpful and inconsistent (Glover & Brown, 2006). The National Student Surveys have provided a public forum for students' concerns about feedback and these data have consistently scored the 'assessment and feedback' category below all other categories since the surveys were first launched in 2005.

The ASSET project addresses many of the challenges inherent in ensuring that feedback supports and encourages learning. The use of short video clips to provide rapid generic feedback has been

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<sup>1</sup> From August 2009

<sup>2</sup> December 2008 – August 2009

shown to engage students and provide an additional mechanism for initiating dialogue between students and staff. We have, for example, encouraged increased awareness amongst staff of what is referred to as 'feed-forward'. Feed-forward can focus students' attention on what is required of them in a particular assignment, but it can also help them engage more with the feedback they are given if they can see where they are meeting the set assessment criteria and where they didn't do quite so well (Sadler, 1983; Higgins et al., 2001; Duncan, 2007).

## Evaluation

Evaluation of the ASSET resource and its potential effects on teaching and learning took place through the use of online questionnaires and focus groups. Staff and students were asked to complete a questionnaire before they used the ASSET resource. The purpose of this first survey was to get an insight into the views, preferences, understanding and experience of current assessment and feedback practice of both staff and students. Questionnaires and focus groups were then conducted with staff and students in the post-use phase.

Analysis of both our quantitative and qualitative pedagogic data demonstrate that the ASSET project has instigated change in the ways in which both staff and students think about, deliver, and engage with feedback. For example, data from our online questionnaires and focus groups with staff and students indicate a positive response to the use of video as a medium for delivering feedback to students. In particular, the academic staff engaged in piloting the ASSET resource indicated that i) using video has made them think more, and in some cases differently, about the ways in which they deliver feedback to students, and ii) they now see video as an effective means of making feedback more useful and engaging for students. Moreover, the majority of academic staff involved in the project have said they will continue to use video feedback. From the student perspective, 60% of those students whose lecturers used ASSET to provide video feedback said that "receiving video feedback encouraged me to take more notice of the feedback compared with normal methods" and 80% would like their lecturer to continue to use video as a method for providing feedback.

## Lessons learnt

- There are advantages but also a number of challenges (e.g. technical and financial) involved in using proprietary software to develop educational resources.
- Video feedback can be used effectively to deliver both feed-forward and feedback in an effective manner which engages students and can be delivered by staff quickly
- Seeking the support from colleagues across the University from both the 'top-down' (i.e. Pro-Vice Chancellor of Teaching and Learning and the Faculty and School Directors of Teaching and Learning) and 'bottom up' (i.e. academics, teaching and learning support staff & the Students' Union) is essential. We believe this approach has been a critical success factor in maximising opportunities for institutional engagement and change.
- Don't underestimate how challenging it may be (in terms of both time and effort) to encourage students to participate in online surveys and focus groups.
- Regular dissemination events (internal and external) are important sources to seek objective feedback whilst creating important networking and resource-sharing opportunities.
- Regular communications within the team (e.g. face-to-face and 'virtual' meetings, project blog) are essential to keep colleagues updated, to maintain momentum and to ensure project objectives are being met. This is particularly important where project teams are comprised of staff from a number of institutions.

## Good practice and transferability

The development of the ASSET resource has been the key 'product' from this project (accessible via the project website). In addition, the ASSET team has developed a variety of materials to disseminate the project such as reports, presentations, publications and posters (Dissemination Outputs). Promotional postcards, flyers, CDs and a banner have also been produced (Promotional Materials). The project website and project blog have been developed to act as a repository of information for both the project team and the wider teaching and learning community, both of which will be built upon through related Benefits Realisation Activities. Currently in preparation are in-depth staff video case studies (e.g. what was using video really like? etc.), virtual learning environment 'frameworks' and associated support materials (see Sections 3.2 and 4.1). A number of papers are currently in preparation to be submitted to peer-reviewed journals in 2010. All of these can be accessed via the project website at [www.reading.ac.uk/videofeedback/](http://www.reading.ac.uk/videofeedback/)

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# About using video for feedback

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## What is it?

Video can provide an exciting, dynamic and engaging mechanism for providing rapid feed-forward and feedback to students. A project at the University of Reading, ASSET, evaluated the use of short video clips (1-5 minutes) that staff prepare and provide to students either in advance of assessments (e.g. as a way of 'feeding-forward') or to provide rapid generic feedback on completed assignments. The project evaluated the use of this medium to enhance the effectiveness and engagement of staff and students with this form of feedback provision.

## Why use it?

Providing high quality and timely feedback to students is often a challenge for many staff in higher education as it can be both time-consuming and frustratingly repetitive. From the student perspective, feedback may sometimes be considered unhelpful, confusing and inconsistent and may not always be provided within a timeframe that is considered to be 'useful'. The use of video addresses many of these inherent challenges by supporting the provision of feedback that supports learning, i.e. feedback that contains elements of 'feed-forward', is of a high quality and which can be delivered in a timely manner. Moreover, the visual nature of video media can enhance learning opportunities whilst enabling staff to 'say' a lot within a given period of time (in comparison to more traditional written methods of feedback). In particular, the pedagogic benefits of video/audio media can be exploited within a Web 2.0 context to provide a new, interactive resource to enhance the feedback experience for both students and staff.

## What's involved?

The use of Web 2.0 technologies in combination with video in the ASSET project has provided students with new opportunities to develop formal and informal learning communities, which aligns with the pedagogic approach of 'learning by doing' (e.g. Kolb, 1984; Gibbs, 1988). In particular, video supports students' engagement with feedback and has provided a new forum for students to 'interact' with one another in relation to the feedback they have received on their work. It has also created new opportunities to establish feedback-related communities of learning between students and staff, thus completing a 'feedback loop'. This is important because, just as communication is much more effective when it is two-way, feedback (and feed-forward) becomes more effective when it takes the form of a dialogue between learners and assessors (Yorke & Longden, 2008). The use of Web 2.0 in learning, is also supported by recent JISC statistics (IPSOS Mori, 2008), which suggest that



*Simple video technologies like web cams and this Flip video camera were used to produce the feedback*

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there are possibilities for mixing 'social networking' with academic studies. These data show that students are regular users of social networking sites on entry to university, with 73% of those surveyed using social networking sites to discuss coursework with others. In addition, these data revealed that despite students being able to recognize the value of using these social networking sites in learning, only 25% felt encouraged to use Web 2.0 features by tutors or lecturers. It is therefore timely to embrace students' willingness to use this new technology and to offer them innovative ways of actively learning for themselves and from one another.

Students are regular users of social networking sites but they are also very familiar with the use of video with over 75% of students viewing videos/live TV on websites and over 55% uploading video or photo content to the Internet (IPSOS Mori, 2008). As well as complementing other forms of feedback we anticipated that the use of video might also speed up feedback delivery for staff whilst offering staff new opportunities to be more creative in their approaches to feedback provision.

### **Skills for producers and users**

We used simple video technology such as webcams and "Flip" video cameras. These are easy to use and can capture clips in a range of settings. Our experience suggests that clips are ideally between 1 and 3 minutes, but certainly no longer than 5 minutes. We found the use of generic feed-forward videos to outline the procedures for a lab practical, or the criteria for a written assignment were particularly popular. The fact that video clips can be made and posted rapidly to provide generic feedback to groups shortly after the hand-in date of an assignment was also popular in the intervening period before students received more detailed individual feedback.

### **Further Information**

For detailed practical and technical information on the use of video to support teaching and learning visit the new video feedback website at the University of Reading.

[www.reading.ac.uk/videofeedback](http://www.reading.ac.uk/videofeedback)

#### **10 Tips**

1. Use 'simple' video technology e.g. webcam or 'flip' videos
2. Make sure the sound is of a reasonable quality
3. Keep the video clips short (less than 5 minutes)
4. Avoid editing and don't worry about "ums" and "ehs"
5. When you first use video, have a practice run
6. Use video to convey your enthusiasm and excitement about your discipline!
7. Try different settings for recording your videos
8. Think about using video clips to prepare students for assignments as well as for feedback
9. Make sure students can easily access the videos
10. Experiment with different formats for providing feedback, e.g. 'talking head', 'screen capture', informal discussions etc.

# iPhone supervision and feedback: a case study

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## Aims and objectives

The aims of the case study discussed here were to revolutionise project supervision by audio recording student project meetings using an *iPhone* smartphone and the Recorder Pro app to provide both parties with a record of the meeting. The rationale for this study came through recognition that student's written notes from supervision meeting do not necessarily reflect what was discussed or do not always contain enough detail. Equally, written notes do not provide the means to clarify information that has been misheard or misunderstood during the supervision meeting. By recording the meetings, a student can review the conversation, thereby reducing their need to seek meetings in addition to those that are scheduled. The recent proliferation of *iPhones*, and other smartphones, amongst staff and students suggests that their use for recording meetings is increasingly viable. This study therefore reports on how well iPhone audio recording and distribution encourages learner autonomy and the extent to which students listen back to the audio files and apply what they hear to their learning.

## Background

The *iPhone* feedback approach was run as a pilot during the 2009-2010 academic year to support 12 undergraduate final year Engineering and Computing 30 credit projects and eight MSc Computer and Network Engineering 60 credit project students. This pilot activity was resourced as a personal initiative by the academic, both financially (a personal *iPhone* contract) and in time. The work builds upon an earlier approach used by the author and intended to identify further working improvements to this earlier model. This complements other personal research strands into how students can utilise *iPhone* audio recording to enhance their learning.

In previous academic years, students have reported how they have valued a similar method in which a *Creative Zen* MP3 audio recording device was used by the author to record formal and semi-formal project meetings; an approach that was shown to benefit student learning (Nortcliffe & Middleton, 2007). However, this approach required that the device was regularly connected to a PC so that files could be named and transferred to it. Once on the PC, the files could then be distributed to the student(s) in question by email; a process that introduced a delay in the student receiving the feedback. In contrast to this, the *Recorder Pro* app on the *iPhone* can be configured to receive and send emails over 3G or wireless networks and this enables the user to record a conversation and, with the stroke of a button, send the file as an email attachment to the student from wherever the conversation has taken place: office, lab, corridor, or beyond the university.

This method enabled the author to provide better quality feedback when supervising MSc students over the summer in situations when it was not possible to meet with them in person. The *iPhone* allowed the academic to access and assess the student work (photographs, documents, diagrams,



etc), which had been sent to her by email. She was able to use the audio *Recorder Pro* app to comment in detail on their progress and to provide appropriate personal project feedback in an accessible format; one that is able to convey "more than mere words" (Middleton & Nortcliffe, 2009a). All of the MSc students are international students and so the audio recording of conversations was particularly important to them: one student was from Sri Lanka and had studied in English for several years; whilst the remaining seven were from India, and had only been in the UK for nine months and were studying in English for the first time.

This case study evaluates the extent to which these smartphone feedback methods enable students to progress autonomously and the associated benefits to their learning. Specifically, the study reports on the extent to which the approach enabled the students to effectively progress in their project work.

## Evaluation

The MSc students' response to the approach was evaluated using a short survey of the cohort, followed by unstructured interviews with a sample of the students. The degree of success in using the *iPhone* feedback method can be determined by the value placed upon the approach by the students, their reported use of the audio files to develop their learning, the impact the approach has had upon their learning, and the students' ability to apply the feedback to their work autonomously.

## Survey results

Four of the eight MSc students completed the survey within 3 days of the survey request. The survey was designed as a qualitative tool to collate their various perceptions of the method.

All of the students who responded to survey reported that they listened back to the audio files, with three noting that they used their PC to do this. They reported that the quality of the audio recordings was sufficient for their learning needs. Two students said that they listened to the files the same day as receiving them, which was usually the day of the project meetings. The remaining two listened at some point prior to their next study meeting. The student responses indicated that their reason for listening to the recordings was to clarify their understanding of the project meeting, and to resolve any associated issues prior to the next meeting. It is noted again, as in previous audio feedback projects (Nortcliffe & Middleton, 2009), that a student in this study refers to "reading" the audio files as opposed to "listening" to them. On closer examination this appears to be an indication of the different listening style needed for academic work. It suggests that some students understand that they have to engage with the recordings more deeply than the audio scanning methods (i.e. tuning in and out) that they may use with other audio media such as music, television or radio. This student explained,

I used to read them two times or sometimes three times, till I clearly understand what exactly my supervisor wants me to do.

In the survey, three students reported making notes whilst listening to the files, and two out of the four reported making notes on the key factors arising from the meeting. Another student explained how he noted the corrections that needed to be made to his project. Two respondents said they used the information to help them plan their further research. The more able student in this respondent group applied all three approaches, as shown in the following response,

The actions when I used to listen to the audio file include

- 1) Making notes
- 2) List out the corrections as directed by my supervisor
- 3) Researching / planning the further steps

The survey responses indicate how the audio files encouraged greater learner autonomy,

I am very much depend[ent] on the recordings, beyond doing my project straight away I can concentrate on what key factors I must go through and specifically completing the project in a professional manner. All my work resembles the instructions from the recordings.

All students reported listening to the files more than once until they were clear about the tasks that needed to be completed, the errors that needed to be corrected and the direction the project should take. As one student explained,

Benefits(of re-listening) include

- 1) you will know where exactly the supervisor is pointing out mistakes
- 2) Listening to audio feedback is more inspiring than the written feedback.
- 3) It shows how much the supervisor cares and guides you regarding the project
- 4) Looks [like] advanced technical support.

The results concur with the academic's own observations: none of the students requested additional meetings. The students appeared to be operating more autonomously with each project meeting following on from the previous meeting; removing the need to cover what had been dealt with previously.

All students reported listening to the files alone; however, two students described how they had accidentally let their peers listen to their feedback. Their peers commented on how useful the supervision recordings were and how the approach improved upon more traditional methods of project supervision. One student explained how this helped him to elicit information from his peers to aid him in making a decision process related to his project work.

Until now most of these students had only ever received written feedback; an approach which they liked as it allows them to re-read it. Responses to this survey indicated that these students only value verbal feedback when it is recorded. However, all of the students recognised that feedback is an important part of an ongoing learning process. Three students perceived feedback as something that is only relevant to a specific module, not appreciating how it can be used to feed forward, or sideways, into other pieces of work or other modules or to their professional lives in the future.

### **Interview results.**

Three students were interviewed. Each student reported that they listened back to the audio files when they return to their student accommodation after the project meeting, sometimes several times, and how they made written notes whilst listening to the files or checked their project progress and actions, as shown by the following comments,

I note all the keywords, go through these in my documents... [listening] two or three times... While working [on the project] I am listening to it...

Once I have completed the work [I listen] again. [I] go back to them and see whether [I] have completed it or not.

When I am doing editing, ...two or three days later, I have to go back to them again, because I can't remember everything we have discussed.

The students also reported how they played the audio files back, pausing it to make notes, before continuing. This requires that the students listen to the files in stages, therefore, as the files last about half an hour and contain a wealth of information. The students agreed this approach enabled and encouraged them to be more autonomous, as highlighted by these two students,

In India we don't have this facility. We are always trying to have appointments with the lecturer and it takes too long. With this [audio recording approach] we can have a quick progress [report] on our project.

It is helpful, because without this audio, once we have had a meeting with you, we may forget also... [it helps us remember more].

The students agreed that without this approach they would not have made sufficient progress on their project and would have required additional support time with the academic; time that academics struggle to find. Audio recording the conversation enables the academic to provide additional learning support, but in a way that doesn't impact upon their workload. Both the survey and interviews indicate how the approach was valued by the students in this study and how it facilitated them in being more autonomous in their project work. The results from this small study are consistent with previous research where *students* were encouraged to audio record conversations that they identified as being valuable in formal, semi-formal, and informal learning situations (Middleton & Nortcliffe, 2009b)

## Lessons learnt

From the academic perspective the *iPhone* and *Recorder Pro* app is simpler than using a separate MP3 recording device, especially given its capacity to email the audio files. It was important to use the *Recorder Pro* app; when other apps were tested, the files were too big to be emailed. However, recordings made with the *Recorder Pro* app from meetings lasting more than half an hour would also be too big to be emailed. The battery life of the *iPhone*, configured so that the screen brightness was reduced, was more than sufficient to support the recording and email transmission for the eight half hour project meetings that were held each Monday during the project period.

Students also reported how it was important to place the *iPhone* so that it picked up both voices in the conversation. A distance of 60 cm or less from each participant worked well, and quality was further enhanced when participants were careful to speak clearly. All of the students reported how it was necessary for them to turn up the playback volume on their PC so that they could clearly hear all of the conversation. This highlights the need to pick a quiet space for the recording and to ensure that people are sitting close enough to each other. The *Recorder Pro* app produces audio files in Aiff format, which are playable on Apple devices and PCs installed with the free *Quicktime* player.

## Good practice and transferability

The *iPhone* feedback approach, as described here, requires each academic to invest in an *iPhone* and the *Recorder Pro* app; something that many academics are not willing to do at their own expense. However, it is also quite an adaptable approach and many of the benefits can be achieved by using similar devices or by asking students to take responsibility for recording meetings. Also, each institution needs to enable their email system so that it syncs with *iPhones*; something that some institutions are reluctant to do due to their concerns about the lack *iPhone* security.

The approach is applicable to any academic scenario involving one-to-one or group supervision. In the case of project and dissertation supervision, the importance of the conversation in the meeting

is particularly valued as it provides often critical and timely feedback that enables the student to progress on their own between meetings. MacDonald (2005, p.88), for example, says, "Too often students receive feedback either too late to help them improve their learning in the future or in a format which does not help them to make the improvements." Staged engagement is also a characteristic of projects and Starkings (1997, p.4) notes how this provides many opportunities for formal and informal input,

The purpose of staged assessment... is to provide feedback for students at various points throughout the project. This enables students to attain the maximum benefit and guidance throughout the project period.

The *iPhone* feedback approach can be widely adopted, especially as student projects or dissertations are common to most undergraduate and postgraduate degree programmes. It provides academics with a smarter, effective mechanism for enhancing existing supervision and is likely to be valued by their students.

### Further information and references

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# About using iPhones/iTouches for project supervision

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## What is it?

The *iPhone* or *iTouch* lends itself to capturing tutor-student project supervision conversations. The *iPhone/iTouch* audio *Recorder Pro* app is an easy-to-use audio memo application that enables users to record project supervision meetings lasting up to about half an hour. The recordings can be emailed as an attachment to the student using a wireless network, so providing the student with an accessible way to re-engage with what was said.

## Why use it?

Project supervision conversations are valuable 'feedback rich' encounters, but their benefits can be lost if good notes are not made. Sometimes points are not fully understood at the time and note-making can get in the way of the conversation. Recording, therefore, allows the student to reflect on what was said and pick up on points later. Not all project supervision meetings are formal events; sometimes they are serendipitous, occurring in corridors, laboratories, lecture theatres, etc. The *Recorder Pro* app on the *iPhone* or *iTouch* provides a convenient, discrete and easy tool in the hands of the academic or the student, wherever they are. Students in the past have reported how recording conversations and listening back to them has helped them to improve their conversational skills and vocabulary (Nortcliffe & Middleton 2007).

## What's involved?

### How to use it

Either the academic or the student needs to own an *iPhone* or *iTouch* v3 (or more recent) with the *Recorder Pro* app bought and installed from the *iTunes* app store. The *iPhone/iTouch* Mail, Contacts and Calendar configuration needs to be synced to the producer's institutional email account. Ideally, intended recipients of the audio recordings need to be added to the producer's *iPhone/iTouch* Contacts to make it easy to locate email addresses following the recording. *Recorder Pro* settings need to be adjusted to enable the app to record and distribute conversations lasting up to half an hour, and *Recorder Pro*'s quality settings need to be adjusted to AIFF audio format. If it is expected that the recordings will be long it may be best to set the quality to low (8 kHz) to reduce the file size, but a judgement about audio quality will need to be made beforehand. Both parties need to have *Quicktime* installed on their PC or laptop to listen back to the *Recorder Pro* recordings. However, if the student or academic has an *iPhone*, *iTouch*, or other smart phone synced to their email account, they can use that to play the recording.



## Production and distribution

At the start of each project supervision meeting the person who owns the device needs to remember to select the *Recorder Pro* app, and press the red button to start the audio recording. The *iPhone* needs to be held or placed where it can capture both parties' voices. The academic should start by introducing the recording: its focus, the meeting date, and purpose. The session can then proceed as normal, uninhibited by the device. At the end of the conversation the file should be paused, an appropriate filename entered and saved, and then sent to the required recipients (usually the student and the project supervisor) using the send button. The email addresses can be selected from the device's Contacts list. *Recorder Pro* populates the email automatically with a default message; however, the sender can amend this. A large half hour recording will typically be about 8MB and will take about half a minute to send before the app will be ready to record again. Ideally the file is sent over a wireless or 3G network. If there is a loss of network the file will remain in the email outbox and will be sent later upon network reconnection. The audio will be received as an email attachment later.

## Adapting this approach

This approach is best kept simple. It may be sufficient in some situations for the academic and the student to record a short summary of what was discussed. Where large recordings are needed, it may be best to make multiple recordings instead.

## Further Information

**Dava Consulting**, "Recorder Pro", available at iTunes store, <http://itunes.apple.com/us/app/recorder-pro/id290854227?mt=8>

**Nortcliffe, A. L. & Middleton, A.** (2007). 'Audio Feedback for the iPod Generation' in proceedings of International Conference on Engineering Education, Coimbra, Portugal, 2007

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### 10 Tips

1. Agree with the student beforehand who will record and share the conversation.
2. Setup the iPhone to receive and send emails and install *Recorder Pro*.
3. Practise using *Recorder Pro* and check that you are able to send, receive and play the recordings beforehand.
4. Remember to record every project supervision meeting.
5. Keep the supervision session recording to under half an hour.
6. Remember to hold or place the device where it will capture both voices clearly.
7. Speak audibly and clearly and explain visual references.
8. Email audio file as soon as the conversation has finished so that recordings do not get forgotten.
9. Encourage the student to listen back to the recording, reflect upon it and take specific actions.
10. Keep an eye on battery life and adjust settings such as screen brightness as necessary.

### Just iPhones? Just Recorder Pro?

Other recording apps are available for a range of smartphones. Some apps are free and have different functionality.



# Mobile Reflections pilot (MoRe)

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## Developing reflection within Initial Teacher Training for students with dyslexia

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### Aims and objectives

This paper reports on a small innovative study using mobile phone technology to encourage reflective learning.

At the time that the idea for the pilot was born, the researcher was a Lecturer in Education and part of a delivery team of Initial Teacher Training (ITT) Programmes within the Post-Compulsory Education Sector (PCET) and specifically the Diploma in Teaching in the Lifelong Learning Sector (DTLLS). One of the challenges she faced then was to find effective ways to enable student teachers to develop reflective skills and become reflective practitioners. Similar challenges are faced by her today in her Academic Development role in higher education.

Reflective journals were used during this specific DTLLS. During Year 1, these were formatively assessed. In this case, journals were written accounts, kept offline, shared and reviewed with tutors but not with peers.

The MoRe (**M**obile **R**eflections) pilot was designed to explore whether the use of freely available Web 2.0 technology and mobile phones could assist dyslexic student teachers to develop reflective skills by capturing their reflections using audio within a shared online learning space.

Dyslexics need extra support with their reading, writing and spelling, so that learning is more accessible and manageable. Recording written reflections is a challenge especially for these student teachers and therefore audio was offered as an alternative. This aligns with the rationale for the Audio Supported Enhanced Learning Project (ASEL, 2008, online) that noted that, "Audio is emerging as a key area of development across the HE sector in meeting the individual needs of an increasingly diverse range of learners, to promote active engagement, to enhance learning and to enrich the learning environment."

According to Schlosser & Burmeister (2008, p.1), the use of audio to support learning is not new but it is "experiencing a renaissance fuelled by the ubiquity of portable audio players, broadband Internet, and software tools that allow the relatively easy creation and distribution of audio files." To this we could now add mobile phones and smartphones.

In situations where it is difficult to meet in person, audio recordings can remove some of the limitations of time and place and support an asynchronous conversation. This accessibility is potentially enhanced by using ordinary mobile phones and the Web. MoRe set out to evaluate this

potential too and to find out if such technologies can transform reflective engagement and support rich and meaningful dialogue amongst learners and tutors.

## **Background**

### **Pilot methodology**

MoRe was a small-scale qualitative pilot developed and completed during the academic year 2009/10, within Success North, a Centre for Excellence in Teacher Training based at the Newcastle College, involving two student teachers from the first year of a part-time generic DTLLS programme. Both in-service student teachers were dyslexic with a subject specialism in Art & Design. Each participant attended different classes and did not know the other at the start of the pilot.

The MoRe pilot ran over 8 weeks during February and March 2010. Audio reflections were recorded on a weekly basis by the students and student teachers were encouraged to comment on each other's reflections throughout the pilot using audio or another medium. In addition to this, audio feedback was provided by the lecturer to both students collectively.

Initial face-to-face training was arranged to familiarise the student teachers with the concept of the pilot and the technologies used. Two further online meetings were arranged to discuss progress and resolve any issues.

At the end of the MoRe pilot, student teachers were asked to reflect on the whole corpus of their audio reflections and identify the value of reflective learning based on their contributions. They provided a review based on their general observations of the methods, their own reflective accounts, and their consideration of the learning that took place throughout the pilot (Moon, 2004).

### **The technical process**

Several technologies were used during the MoRe pilot:

- The students' own mobile phones
- Landlines (optional)
- Internet access
- [www.wordpress.com](http://www.wordpress.com) (freely available blogging platform)
- [www.ipadio.com](http://www.ipadio.com) (freely available audio blogging platform)

A group blog was set up for the project at Wordpress.com and participants were required to create accounts that gave them authoring rights to this. They were also required to set up a free account with iPadio.com and were encouraged to download the *iPadio* app to their smartphone. *iPadio* is a mobile audio blogging tool. Participants set this up so that audio postings made with *iPadio* were automatically displayed within the shared *Word Press* blog.

Student teachers agreed to cover the cost of the internet service as well as any related phone charges to their UK landline. No other costs specific to the pilot were incurred.



It was hoped that the confidence of the participant student teachers would be increased and that they felt empowered by using their own devices. However, neither of them had used audio before to support their learning, nor were they familiar with some of the Web 2.0 tools used.

## Evaluation

Student teachers participated throughout the pilot. The data collected and analysed during the MoRe pilot suggest that using audio in combination with mobile and web technology was an effective way to engage these dyslexic student teachers and to help them to develop the reflective skills within a supportive online community. The student teachers commented that audio was, for them, a more 'natural' way to capture their reflections,

It feels natural. I can listen back and have another chance to filter what I can take away and learn from it.

*(voice comment left by participating student teacher)*

They clearly preferred this method to writing and also felt that they were learning as a result of making their own notes and commenting on each other's postings. They found the process easy and enjoyable,

Really easy. It would have taken me 2 hours to write my reflective journal. Now this is just a quick phone call between my dusting.

*(voice comment left by participating student teacher)*

The students used audio to comment on each other's contributions and the evidence suggests that both listening to and commenting on each other's reflections triggered their own further thinking, reflection and action.

Measuring the development of reflection was possible using a slightly modified version of the classification model developed by Hatton & Smith (1995). The evidence from this study suggests that a deepening of reflection took place during the lifecycle of the pilot. In particular student teachers progressed from 0 ("Accounts limited to reporting events, sporadic evidence of reflection") to 1 ("Own practice is analysed, some reasoning for decisions and actions, limited to own viewpoints and perspective"), with some elements of 2 ("Stepping back, practice analysed, reasoning well developed, linking own viewpoints with those of others, exploring problem solving").

## Lessons learnt

### Technology

There were some initial drawbacks identified during the MoRe pilot. These were mainly linked to the technology and the Web 2.0 tools used. They could be addressed in future applications through additional initial training and familiarisation. More investment in support materials and support strategies should be developed for larger scale applications of this approach especially in getting students up and running with the technologies. It is also recommended that educators interested in adapting the MoRe approach, familiarise themselves with the technology prior to implementation of similar projects with their own students.

### Peer support

Carrying out the MoRe pilot on such a small scale allowed very close observation of the buddy approach used. In this study the student teachers engaged in a dialogue and were supportive to each other. However, there were time limitations as the pilot progressed and the findings suggest

that the peer support mechanism was only partially successful. Further fine tuning of the peer support model is needed to make it more effective for future and larger scale MoRe applications.

### **The tutor's role**

Tutor support in the form of audio feedback and online synchronous conversations with student teachers proved to be important elements of the support network for these student teachers and was found to be motivational. The evidence from the MoRe pilot shows that audio feedback successfully captured students' attention, made feedback engaging and provided opportunities for further reflection and dialogue. Research carried out by Rotheram (2008) also showed that students are very positive about audio feedback and feel that it is more personal, easier to understand and gives them the opportunity to listen to it again and again, leading to their more meaningful engagement with feedback.

### **Good practice and transferability**

The MoRe approach could be introduced to develop reflective skills and social models of feedback in other situations, including mainstream ITT programmes involving whole cohorts of student teachers. However, it could also be used for coaching and mentoring lifecycles and in other professional areas to develop reflective skills with no capital investment. Access to freely available Web 2.0 tools, and students' own mobile devices and Internet connections make the MoRe approach an attractive, viable and sustainable approach for teaching and learning.

Careful planning and preparation are needed to implement a MoRe approach in other settings. In this study, familiarisation with the technology, initial training and ongoing support were vital in making it work. The demands of technical support depend on cohort size and familiarity with the specific tools to be used. Support needs should not be under-estimated, especially at the initial stages. A sophisticated peer support model is essential to transform the role of the tutor, in this case, to one of moderator.

The MoRe approach works because of its clear pedagogical concept, its simplicity, accessibility, flexibility and because of the participants' familiarity with the digital tools used; factors which all contribute to providing more meaningful and personalised learning opportunities for every learner.

### **Conclusion**

Overall, the MoRe pilot provided food for thought and opened new paths for further exploration involving the use of mobile devices and web-based technologies. Findings of this study confirm Middleton's (2009) observations that audio can actively engage a growing and diverse student body and provide richer learning experiences. This small pilot demonstrates there are various methods available for supporting and sharing audio reflection in mainstream ITT and other disciplines that can be devised to enhance reflective learning amongst dyslexic students and others who face a variety of challenges including concurrent access to each other.

The findings of the MoRe pilot also signal the need to make reasonable adjustments within ITT programmes to remove barriers and disadvantages for learners with disabilities, including dyslexia, and to transform learning into an inclusive experience by providing flexible and meaningful engagement opportunities. Providing additional and more versatile opportunities, as described here, will also benefit the wider student community within and beyond ITT.

The researcher is currently exploring the MoRe approach in an academic staff development context, in particular for capturing audio reflections on observations carried out within the Postgraduate Certificate in Academic Practice at the University of Salford and intends to evaluate its use by lecturers as a peer review tool across the university.

### **Further information**

The online MoRe pilot space is available at <http://morepilot.wordpress.com>

The researcher would be interested in collaborating with others using the MoRe approach. Please get in touch if you would like to discuss this or find out more about this pilot. A detailed project report is available upon request.

### **References**

- Audio Supported Enhanced Learning** (2008). ASEL at <http://aselproject.wordpress.com/> [accessed 13 Oct 2010]
- Hatton, N. & Smith, D.** (1995). Reflection in teacher education – towards definition and implementation, *Teaching and Teacher Education*, 11 (1), pp 33-49.
- Middleton, A.** (2009). Beyond podcasting: creative approaches to designing educational audio, *ALT-J, Research in Learning Technology*, Vol 17, NO. 2, July 2009, pp 143-155.
- Moon, J.** (2004). *A handbook of reflective and experiential learning, theory and practice*, Oxon: RoutledgeFalmer.
- Rotheram, B.** (2008). Sounds Good: Quicker, better assessment using audio feedback, *Evaluation*, 27 July 2008.
- Schlosser, C. A. & Burmeister, M. L.** (2008). Audio in Online Courses: Beyond Podcasting, at [http://www.nova.edu/~burmeister/audio\\_online.html](http://www.nova.edu/~burmeister/audio_online.html) [accessed 13 October 2010]

# About using Mobile Reflections (MoRe)

**Chrissi Nerantzi**

*Academic Developer, University of Salford*

## What is it?

MoRe is an approach intended to assist students to develop reflective skills through audio on-the-go by using freely available Web2.0 technology and their own mobile phones. Student's 'audio reflections' and audio feedback are captured and shared with peers and tutors in a supportive online learning space. The MoRe approach was trialled with a small group of dyslexic student teachers over a period of 8 weeks during the academic year 2009/10 within Success North, a Centre for Excellence in Teacher Training based at the Newcastle College. Participating student teachers were in year 1 of a part-time generic Diploma in Teaching in the Lifelong Learning Sector (DTLLS) programme.

## Why use it?

**Audio works for me!** – *audio, an alternative to more traditional approaches used to capture reflection.* Participating students in the MoRe pilot found that using audio to record their reflections was much more natural and a deepening of reflection was evident as the pilot progressed.

**User friendly!** – *no advanced technical skills needed.* Tools used are simple. Familiarisation for the technophile will not take long at all. Technophobes might need some extra help, but not that much.

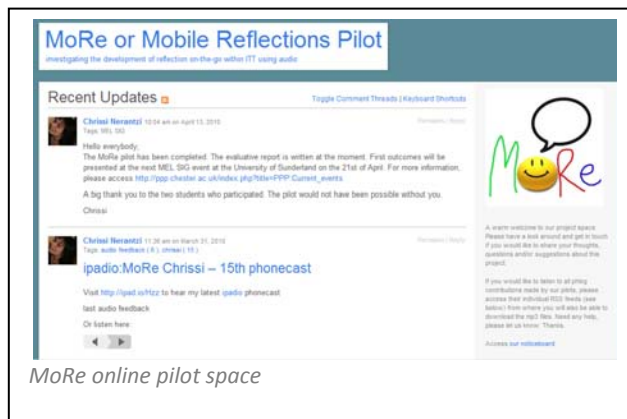
**DIY and in no time!** – *you don't have to rely on other people! However, for technical support you might work with other enthusiasts or online support communities.*

**Cost effective!** – *No funding? Be resourceful and use what you and your students have got!* Freely available Web2.0 tools and the use of own mobile devices and internet connections make the MoRe approach an attractive, viable and sustainable solution for teaching and learning.

## What's involved?

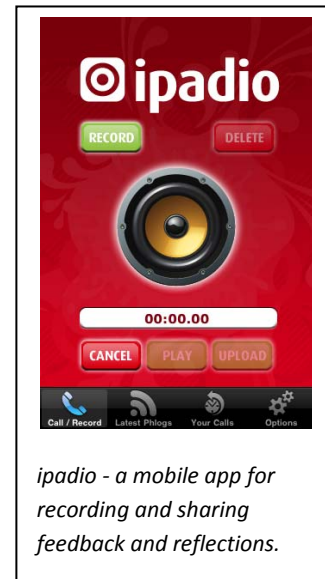
The MoRe uses audio, existing mobile phones and freely available Web.2.0 tools.

## Step-by-step mini guide



The screenshot shows a WordPress blog post titled "MoRe or Mobile Reflections Pilot" with the subtitle "Investigating the development of reflection on-the-go using IT using audio". The post is dated 10:54 am on April 13, 2010, by Chrissi Nerantzi. The content includes a "Hello everybody" greeting, a notice that the MoRe pilot has been completed and an evaluation report is being written, and a thank you message to two participating students. There is a link to "ipadio:MoRe Chrissi – 15th phonecast" and a "test audio feedback" section with a play button. A sidebar on the right contains a "MoRe" logo and a "A warm welcome to our project space" message.

*MoRe online pilot space*



*ipadio - a mobile app for recording and sharing feedback and reflections.*

- Set up a group blog for your project at [www.wordpress.com](http://www.wordpress.com) and ask participating students to create a Wordpress account (there is no need for them to create separate blogs for this approach).
- Ask the students to provide you with the email address they used for their Wordpress account so that they can be added to the group blog. Give your students 'author'

rights to the blog so that they can comment and add posts.

- Create an account at [www.ipadio.com](http://www.ipadio.com), or download the *iPadio* app to your smartphone and follow the instructions there to link up to 2 phone numbers (mobile or landline). Also, in order that the recordings made using iPadio appear automatically within the group blog, the *iPadio* account has to be linked to *Wordpress* by adding the group blog details to the 'Social Media' tab in *iPadio*. Ask your students to do the same.
- Test the above by making a real phone call and check if the audio file appears within your group blog. If this is not the case go back the settings.
- Add some useful information on your group blog and additional pages if needed and then begin.

The MoRe approach was developed to be used within Initial Teacher Training. However, it can be applied in a variety of contexts and learning situations, with students at under- and postgraduate level, studying in other contexts to capture and develop reflection and to share these within a learning community. Further applications beyond reflection could also be explored in different disciplines and professional areas.

### Skills for producers and users

- Investing time in exploring the technology before implementation will make a big difference.
- Setting-up a trial in collaboration with a colleague will help, as well as arranging training and ongoing support for participating staff and students.
- Learning to support students effectively online and on-the-go.

### Further Information

**Ally, M.** (ed) (2009). Mobile learning: transforming the delivery of education and training. Online at: [http://www.aupress.ca/books/120155/ebook/99Z\\_Mohamed\\_Ally\\_2009-MobileLearning.pdf](http://www.aupress.ca/books/120155/ebook/99Z_Mohamed_Ally_2009-MobileLearning.pdf)

**Herrington, J., Herrington, A. , Mantei, J., Olney, I. & Ferry, B. (eds)** (2009). New technologies, new pedagogies: Mobile learning in higher education, Faculty of Education, University of Wollongong, 2009, 138p. Online at: <http://ro.uow.edu.au/newtech/>

**iPadio** - phonecast live to the internet at <http://www.ipadio.com>, tutorials available at <http://blog.ipadio.com/category/tutorials/>

**JISC Digital Media:** Mobile learning for Education, online at: <http://www.jiscdigitalmedia.ac.uk/crossmedia/advice/mobile-learning-for-education>

**Mobile Learning Network (MOLENET)** at <http://www.molenetprojects.org.uk/moletech/>

### Further useful resources:

Author's social bookmarks:

<http://www.delicious.com/chrissinerantzi/mobile>

### 10 Tips

1. Reflect on your current practice to develop reflection: What works, what doesn't?
2. Think about the why and how it could be enhanced further
3. Collaborate
4. Use the digital tools that are available!
5. Experiment with freely available Web2.0 tools
6. Get familiar with the technology before using it with students
7. Plan carefully! Who else should/could be involved?
8. Build-in familiarisation with technology for your students and ongoing support mechanisms
9. Get feedback
10. Start small!

# A multi-technology formative assessment strategy

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**Dr W. Rod Cullen**, Principal Lecturer in Learning and Teaching Technologies, Manchester Metropolitan University  
email: r.cullen@mmu.ac.uk

## Aims and objectives

This case study has its origins in comments made to me by many academic colleagues in relation to both formative assessment in general and more specifically the use of technology to provide feedback. For example:

“I can’t get my students to do work that doesn’t get a mark”;

“My students don’t use the feedback I give them, in fact sometimes they don’t even pick it up”;

“I like the idea of using technology (for feedback) but how much time and effort will it be for me?”

I teach on a Post-graduate Certificate (Pg Cert) and Masters (Pg MA) in Academic Practice at Manchester Metropolitan University. Recently appointed academic staff (without relevant teaching qualifications) are required to undertake this programme but the course is open to all relevant staff in the university. Consequently, new and experienced academic staff, academic support staff and increasingly technical support staff undertake the programme.

An optional unit which I teach, Designing Courses for Virtual Learning Environments (DCVLEs), provided an ideal opportunity to explore different technologies to support a formative assessment strategy addressing some of the issues raised by colleagues.

This case study aimed to evaluate a range of technologies (Written formats [forum posts, *Microsoft Word* track changes, proformas], Audio recordings and Video screen captures [sometimes called “screencasting”]) used to provide feedback in terms of:

- The “tutor time” investment;
- Student engagement with the unit and with their feedback;
- Student perceptions of the feedback provided.

## Background

DCVLEs is a 10 credit optional unit on the Pg Cert/MA programme. Between 10 and 20 participants normally study on the unit. The programme as a whole utilises a blend of online and face-to-face delivery and the use of technology is central to many aspects teaching and assessment practice. This is particularly true of the DCVLEs unit.

As a 10 credit Masters unit, DCVLEs nominally requires 100 hours of participant engagement. The unit is taught over a short time frame (4 weeks) with little face-to-face contact (one weekly three

hour session, giving a total 12 hours in-class contact). Participants are all very busy (mainly full time academic and support staff). The online environment, (institutional VLE (WebCT) and ePortfolio system (Pebblepad)) are essential in delivering the unit and supporting the additional 88 hours participant engagement. A further, complication is the 3 different assessment requirements depending on participant status on the unit, as follows:

- PG Cert participants: no formal assessment for the unit (learning demonstrated in programme based portfolio of learning)
- PG Masters participants: formally assessed as part of the unit
- Participants taking the unit as continuing professional development (not registered to either programme) have several options
  - assessed the same as the PG Masters participants and receive 10 Masters level credits
  - complete CPD record of learning form for use in PDR
  - no formal assessment

I adopted a simple model for delivery of the learning and teaching (see figure 1) and embedded a technology centric assessment strategy. This aimed to engage participants in formative online activities that prepare them for active classroom sessions. As tutor, I provide individual, personalised feedback on the online activities. The active classroom sessions required participants to share the outputs of their online preparation within small groups and with me as the tutor/facilitator and they are encouraged to comment and advise on the work of others. In short, the participants have to make use of their online feedback in the classroom sessions. Classroom sessions are followed up with additional formative on line activity and further individual personalized feedback that is used to prepare for the following classroom session. This cycle repeats over the 4 weeks of the course (Figure 1).

The aim of this mode of delivery is give “value” to the feedback provided to the participants. If participants don’t engage with the online formative activities they find it difficult to contribute in class. This is explained and discussed in detail as part of the activities in the first classroom session. The participants are asked to “buy in” to the participatory nature of the unit right from the start.

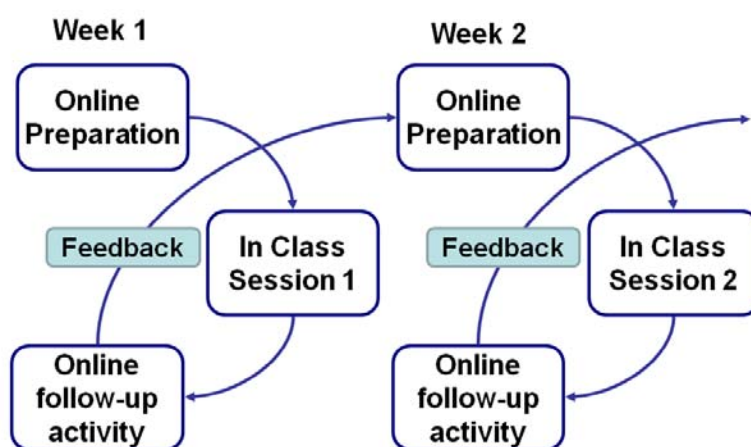


Figure 1 Delivery model

Overall, the formative assessment strategy is envisaged as a mini-portfolio of formatively assessed activities that in effect constitutes a plan to implement blended learning in a unit on which the

participant teaches. It is underpinned by principles of regular (weekly), rapid (before the following classroom session), personalised feedback delivered in range of formats. The technologies used to provide feedback over the three years that I have run this unit are shown in table 1. The individual elements of the portfolio provide an evidence base for all of the assessment requirements outlined above.

- PG Cert participants: mini-portfolio of activities can be included directly as evidence of learning from the core option in their programme academic practice portfolio;
- PG Masters participants: mini-portfolio is the evidence base for a 1500 word summative reflective account of learning from the unit;
- CPD participants: mini-portfolio can be used as evidence for their preferred mode of assessment.

All participants have, on completion of the unit, a complete plan for the use of the institutional VLE in as aspect of their own teaching. These activities, and therefore the unit, represent a valid and worthwhile engagement for the participants.

*Table 1 - Feedback methods employed*

Week	Online Formative Activities	2007/8 Feedback Provision	2008/9 and 2009/10 Feedback provision
1	a. Review of learning outcomes b. Complete a Learning Teaching and Assessment (LTA) matrix	Online discussion forum Track changes/ annotated script <i>Microsoft Word</i>	Written proformas via Pebblepad
2	c. Revise LTA matrix	Annotated <i>Microsoft Word</i> doc + Video screen capture	Annotated <i>Microsoft Word</i> doc + Video screen capture
3	d. Activity design development plan	Annotated <i>Microsoft Word</i> doc + Video screen capture	Annotated <i>Microsoft Word</i> doc + Audio recording
4	e. Monitoring and evaluation plan f. Timeline	Annotated <i>Microsoft Word</i> doc + Video screen	Annotated <i>Microsoft Word</i> doc + Audio recording

## Evaluation

My evaluation was split into two parts.

1. I kept a very detailed log of my activity as a tutor. This included: recording details of the time spent on emailing participants; telephone conversations; materials development; providing feedback on weekly tasks. I subsequently categories these activities and calculated the amount of time engaged in each. This case study only presents data relating to the provision of feedback.
2. I explored participant experiences of the feedback. I conducted one-to-one interviews and a standard end of unit survey, used records of students' submission and attendance, and gathered



informal anecdotal evidence (listening to and discussing the course with participants throughout the course).

## **Lessons learnt**

### **Time investment**

*Figure 2* below shows time I invested producing feedback using the different technologies. Main points of interest and lessons learned are highlighted in numbered red ovals and are explained below.

#### *Figure 2 - Time invested in providing feedback*

1. Written feedback provided using Track Changes in Microsoft Office docs and/or posted to WebCT discussion forums required similar time investment to structured written proformas in Pebblepad.
2. In general, video screen capture technology compared well to written feedback in terms of the time taken to produce it. However, technical problems encountered in producing screen capture feedback on one task doubled the time required to produce feedback in 2008/9. The time involved seems to snowball very easily (using any technology) when problems occur.
3. Audio feedback consistently required less time (up to 50% less) to produce than video feedback for the same task. In general, audio feedback seems to take less time to produce.
4. Whichever feedback technology was employed it required a significant time investment as a tutor. This ranged from 2-4 full working days, over the 4 weeks of the course, depending on the number of students. This was only possible as time had been allocated specifically for this.

On a personal note, I find recording feedback verbally (both audio and video screen captures) comes more naturally to me than producing written feedback. I find it a more enjoyable activity.

## Student Engagement

Figure 3 shows average attendance and submission over the 4 weeks of the course. The main points of interest and lesson learned are again highlighted in the numbered red ovals. These are explained below.

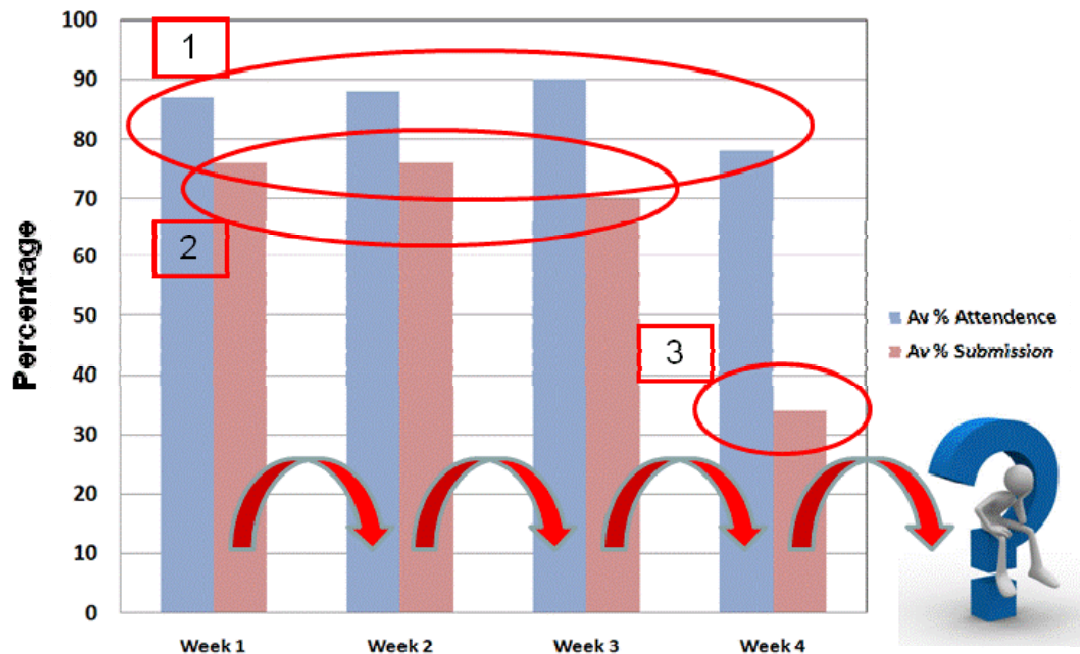


Figure 3 - Attendance and submission 2008-10

1. Overall, attendance on the unit is reasonably high (88-90%). I believe the cyclic format of the unit encourages attendance as the participants comment that they feel they are “missing out” on learning opportunities if they miss sessions. I have had several requests from participants to video record sessions they are unable to attend.

2. Submission rates are generally high (70%+) for formative tasks. This is particularly pleasing considering that no marks are awarded. Some participants have completed missed activities after the course has finished and requested some feedback (not included in the data). It appears that it is possible to get students to engage in activities for which they receive no marks where they perceive there is real value to the activity.

3. There is a consistently lower submission rate in Week 4. I think the main reason is that there is no follow-up face-to-face session. The perceived “value” of this task is reduced. It is worth noting that most participants completing the week 4 task are PG MA participants who are required to complete a summative reflective account. The task is useful to them in this respect. It tends to be this task that participants return to after the course has finished (see 2. above). This emphasises the importance a tangible “product” as part of the online formative activities and the use of that “product” in follow-up activities.

## Student perceptions

Participants expressed a clear preference for audio and video over written feedback formats. However, *Microsoft Word* annotations provided alongside the audio and video formats were highly valued as they provide additional context and signpost the main points. The participants found

audio and video feedback more personal and engaging and there was a feeling that the spoken word was in some respects more understandable than written feedback. On a note of caution, most of the participants are receiving feedback in audio and video format for the first time and this newness/novelty may influence these perceptions.

There was a 50:50 split in preference for audio or video feedback. I have some evidence to suggest that video and audio feedback were used differently. Some participants valued the “high visual impact” of video screen captures, which tended to be watched in a single sitting like TV programme. Others felt that audio recordings allowed a more reflective approach (that suited them) as they could stop, start and rewind recordings while reading their original (annotated) piece of work.

### **Good practice and transferability**

All of these technologies can provide effective engaging feedback for your participants. I found that there were different strengths associated with each. Video screen captures have a high visual impact and may be most suitable to tasks with a strong visual element. Audio feedback made it easy for me to explain and expand on complex issues and was the most time efficient. The written feedback was most familiar and comfortable for some the participants. It comes down to choosing the right tool for the job at hand.

The key message to take from this work, however, is that the relationship between formative online tasks and face-to-face sessions and summative assessment is the key to engaging participants with formative tasks. These tasks must have “value” and this must be clear to the participants. This has to be designed in to a well-planned overall (formative and summative) assessment strategy.

### **Further information and references**

Bob Rotheram (National Teaching Fellow) has led the way with audio feedback. His *Sounds Good* project website contains a wealth of useful ideas, information and evidence.

Current website <http://sites.google.com/site/soundsgooduk/>

Original website [http://web.me.com/simonft/Sounds\\_Good/Welcome.html](http://web.me.com/simonft/Sounds_Good/Welcome.html)

Both Kieran Maguire and Nick Scott at MMU have done some interesting work using video to provide tutorials and generic feedback. This work originally inspired me to have a go with personalised video feedback.

<http://www.celt.mmu.ac.uk/ltia/issue16/maguire.php>

<http://www.celt.mmu.ac.uk/ltia/issue15/scott.php>

# About using screencast feedback

Dr W. Rod Cullen

Manchester Metropolitan University

## What is it?

Audio-video screen capture technologies are able to record, in real time, a video of what is happening on your computer screen while, at the same time, recording your voice describing/explaining what is happening. It is possible, for example, to display a student assignment (e.g. a *Microsoft Word* document) on screen and make an audio-video recording of yourself highlighting/pointing to or editing the content, with the mouse/keyboard, while providing more detailed verbal feedback on the work.

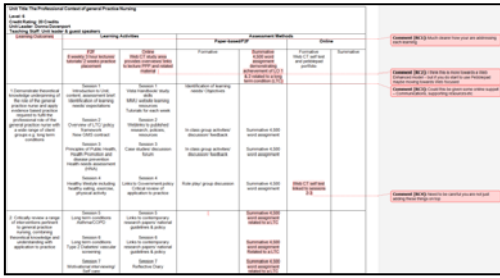
## Why use it?

Many learning and assessment tasks that we give our students have visual or design components. For example, we often ask students to produce diagrams, figures, design drawing, tables and graphs. Written feedback on such work is not only difficult and time consuming to write but can often be difficult for students to interpret in the relation to their work. Audio-video screen captures allow the tutor to provide feedback on such work in a visual and verbal format that, it is argued, is better suited to this type of work.

## What's involved?

For this method of feedback student work must be submitted in an editable electronic format. The following describes a process for work submitted in *Microsoft Word* format.

- Step 1. Annotate the work using the track changes tools in *Microsoft Word* e.g. highlighting text, adding comments in the margins etc. (See Figure 1). This familiarises the marker with the work and identifies the main points on which to feedback.
- Step 2. Turn *Microsoft Word* to the full screen reading view
- Step 3. Set up a screen capture area with the chosen technology.  
Note: Options include *Camtasia*, *Camstudio*, *BB Flashback*, *Jing* and *Wink* among others.
- Step 4. Record audio-video feedback on the work using a basic script as follows:
  1. Greet the student using their first name
  2. Introduce yourself
  3. State the work that the feedback is for
  4. Make an overall comment on positive aspects
  5. Expand on each of the points highlighted using track changes\*



You may be falling in to the classic trap here of simply adding extra layers onto your teaching by adding extra elements in using the VLE. In principle, this can lead to a richer provision for your students but you have got to be careful that you have the resources and time available to support the additional development and online support that this will require. If you don't have the resource you need to think about how you will use the online tests to add value to targeted parts of your face-to-face teaching.

The above shows a design matrix submitted in an *Microsoft Word* document by a student with comments (pink) added by the tutor using Word's Review tools. The commented document is displayed on screen and recorded as a video screen capture. The speech bubble represents an audio accompaniment expanding upon the main highlighted points.

6. Sum up and outline follow-up work
- Step 5. Save the audio-video screen capture and publish in a suitable format. I have found .wmv (Windows Media Video) and .swf (Shockwave Flash) to be the least problematic.
- Step 6. Make the video available to students via email or other personal technology account (e.g. institutional VLE)

**Note:** Steps 5 & 6 can be time consuming, accounting for up to half of the time invested in producing the feedback.

This method can be adapted for work submitted in any electronic format that can be displayed on screen, e.g.

- Images produced by photography students
- Photographs/scans of sketches made by art students
- Engineering drawings
- Plans or designs made by architecture students

This form of feedback has also been used to provide feedback to students on referencing in essays.

## Skills for producers and users

Producers need to be able to:

- Use track changes and/or comments tools in *Microsoft Word*
- Have basic skills with a screen capture technology to record and publish audio-video recording. The method described above does not require producers to edit the recordings.
- Make the feedback available to individuals securely and privately (e.g. via email or personal space in the institutional virtual learning environment).

It is useful for users to be able to:

- Open and tab between two applications, the media player (to watch the video) and *Microsoft Word* (so they can cross reference to their annotated work).

**\*Note:** Other users of audio and screencast feedback have suggested that media-enhanced feedback methods allow them to emphasise selected key points, rather than to add detail to all points [editor's note].

### 10 Tips

1. Find a quiet work space where you will not be disturbed.
2. Turn off your mobile phone to avoid it ringing during recording.
3. Print out a copy of the basic script and use this as a reminder.
4. Use a combined microphone and earphones headset to keep hands free.
5. Annotate the students work with brief text comments and use audio for detail\*.
6. Produce recordings in either .wmv or .swf formats for the smallest files sizes and so they can be viewed on most computers.
7. Don't worry too much about tripping over your words - just apologise, correct your mistake and keep going.
8. Keep your audio-video feedback to less than 6 minutes to keep students engaged and file sizes small enough.
9. Tell your students in advance that you are going to use this form of feedback and explain why you think it is a good idea.
10. Be prepared to provide technical support for students who are unable to view and/or listen to their feedback. If you cannot do this yourself make sure that your IT support services can and will.

### Further Information

Using Screen Capture Software in Student Feedback: A case study from the HEA English Subject Centre  
<http://www.english.heacademy.ac.uk/explore/publications/casestudies/technology/camtasia.php> [Last accessed 4th October 2010]

Times Higher Article: The spelling mistake: Scene one, take one  
<http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=207117> [Last accessed 4th October 2010]

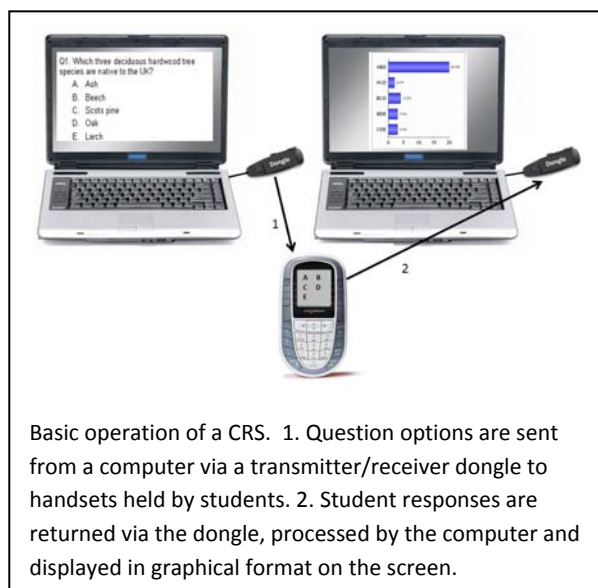
Articles from MMU journal Learning and Teaching in Action  
<http://www.celt.mmu.ac.uk/ltia/issue16/maguire.php> [Last accessed 4th October 2010]  
<http://www.celt.mmu.ac.uk/ltia/issue15/scott.php> [Last accessed 4th October 2010]

# Formative assessment using Classroom/Personal Response Systems

**Dr W. Rod Cullen and Dr Steve Maw**  
*Manchester Metropolitan University and  
UK Centre for Bioscience*

## What is it?

Classroom response systems (CRS) are becoming increasingly common in many educational settings (Fies & Marshall, 2006). A CRS normally includes a set of individual hand-held or desktop keypads that transmit (usually via a wireless technology) student votes/responses to questions (usually multiple choice questions (MCQ)) set by the tutor, to a central device that collates, analyses and displays results to a classroom on screen (see figure).



## Why use it?

There is general agreement that CRS promote learning when coupled with appropriate pedagogical methodologies (Fies & Marshall, 2006) and can significantly improve interactivity in the classroom (Siau et al. 2006). Perhaps more importantly, CRS facilitates easy delivery of frequent formative assessment of students (Roschelle et al. 2004). With CRS such feedback can be elicited from everyone in the class (rather than just from individuals who choose to put up their hands in response to questions) and allows tutors to evaluate the understanding and needs of a whole class (Caldwell, 2007).

## What's involved?

There are lots of options to using a CRS formatively. The general principles are however the same. The tutor sets questions that test the knowledge and/or understanding of a group of students, the students enter their responses into their handsets and the results are collated and displayed in some way (usually graphically) for the tutor and normally the class to see. This allows the tutor to assess very rapidly the level of knowledge/understanding in the whole class and to make an informed decision to move on to something new or that further explanation/deliberation is required. The results can often be used by the tutor as a stimulus for further more in-depth discussion or as a means of unpicking any misconceptions that the students may have.

There are many variations on this theme. For example, it is generally agreed that discussion between students is beneficial to learning. Handsets can be shared (one between two or in larger groups). The tutor can set the question, and encourage the pairs/groups to discuss the questions and respond once they have come to a collective understanding. Again the results can be used by the tutor to make an informed decision about what to do next. A further variation can foster critical debate between peers. The tutor sets a question and requests an immediate response from everyone in the

class. The students are then required to discuss their answers in pairs, in groups or as a whole class and then to answer the question a second time. The differences between the two sets of results again provide the tutor with an opportunity to assess knowledge and understanding in the whole class and a basis for further discussion.

Given the range of questions types available in many of the CRS technologies (e.g. MCQs, True/False, Yes/No, Ranking/Sorting, Likert Scale, Numerical and free text entry) and the option to use these in many different ways (see above) this is potentially a very powerful tool for formative assessment and teaching and learning in general.

### Skills for producers and users

Most current systems are very user friendly. Some are even embedded in familiar technologies such as *PowerPoint*. Several providers' web sites are given below. The pedagogic challenges include designing objective questions that test more than basic factual recall (see links to online tutorial below) and interpreting the student responses in terms of their knowledge and understanding. The latter is really dependent on the quality of questions set.

### Further Information

**Caldwell, J. E.** (2007). Clickers in the Large Classroom: Current Research and Best-Practice Tips, *CBE Life Sciences Education* 6(1): 9-20.

**Fies C. & Marshall, J.** (2006). Classroom Response Systems: A Review of the Literature *Journal of Science Education and Technology*, 15 (1), 101-109.

**Roschelle, J., Penuel, W. R., & Abrahamson, L.** (2004). Classroom Response and Communication Systems: Research Review and Theory. In: *Annual Meeting of the American Educational Research Association. San Diego, CA, 20*

**Schreyer Institute for Teaching Excellence:** Writing multiple choice items to assess higher-order thinking

<http://www.schreyerinstitute.psu.edu/MultipleChoiceItems/> [Last accessed 21<sup>st</sup> Oct 2010]

### A small selection of CRS providers

Promethean Learner and Student Response Systems

<http://www.prometheanworld.com/server.php?show=nav.16> [Last accessed 21<sup>st</sup> Oct 2010]

Quizdom Audience Response Systems <http://www.qwizdom.co.uk/> [Last accessed 21<sup>st</sup> Oct 2010]

TurningPoint Voting options <http://www.turningtechnologies.co.uk/products/voting-options.html> [Last accessed 21<sup>st</sup> Oct 2010]

### 10 Tips

1. Test the technology thoroughly in the actual room, well in advance of your session. Make sure the handset signals can be received from the back of the room.

2. Be clear what it is that you want to know about your students. What cognitive skills do you want to test?

3. Design your questions with care, with tip 2. in mind, so that you are testing more than simple factual recall.

4. Try your questions out on a colleague first.

5. Do not over use CRS in any one session – students will get bored of it. Three to four questions in an hour session is a good guide in general teaching situations.

6. Don't underestimate how much time it takes to deliver, debate, get a response and provide feedback on just one good question. Give yourself 10-15 minutes as a minimum per question. Make a session plan and stick to it.

7. Use the CRS to encourage discussion between your students.

8. Vary the use of individual and group answers within a session.

9. For formative purposes it is better to set up the CRS so that responses are received anonymously. This has been shown in most research to encourage participation.

10. Introduce an element of completion into group responses from time to time. CRS can be used very effectively for group quizzes and these can get a class buzzing.

# Designing media-enhanced feedback

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*The following paper represents an Audio Feedback Design workshop given at the Media-Enhanced Feedback event*

## Introduction

What should audio feedback look like, sound like, or feel like? Audio feedback, as with other examples of media-enhanced feedback, is highly adaptable. In suggesting academics can do more with digital media to enhance learner engagement at staff development or special interest group events, the author has frequently turned to examples and case studies to demonstrate the ways in which peers have embraced digital media technology. However, what is apparent when such materials are produced is how personal the approaches are. Academics use digital media differently to suit their particular contexts.

Personalisation is important: in thinking about effective feedback (Rust 2001; Rotheram 2007) the method is tailored to address the real and particular needs of a given situation ensuring that the feedback carries real meaning for the recipient. However, it can be difficult to imagine and make decisions about all of the options when thinking about how to make feedback more personal. A way is needed therefore to facilitate a feedback design process that is able to respond to the differences found in every situation.

This paper sets out some of the factors that enable the academic to design effective media-enhanced feedback. Many of the considerations are not particular to media-enhanced feedback; they are just factors that can be considered in devising any feedback strategy. Other factors highlight how technology can extend the range of tools that enable academics to usefully engage learners in a timely and meaningful way. It becomes clear that feedback can take many forms, though at the heart of media-enhanced feedback is a common and strong sense of connection through the use of the asynchronous digital voice.

Higher education is keen to respond to the criticism levelled at it in recent National Student Surveys that the sector 'could do better' in providing feedback to its students. Perhaps part of the response is that feedback pervades much academic practice and just needs to be made more explicit (Glover and Brown, 2006). The other side to this, however, is that if academic staff are to respond to the call for more and better feedback, its production has to be manageable. The methodology here, therefore, attempts to provide a framework to help academics design meaningful media-enhanced feedback without adding unreasonably to their workload. In this methodology the academic must think and work as a designer: critically, creatively, methodically and collaboratively.

## What is feedback?

Whilst it is easy to give feedback ("Good", "Bad", "Right", "Wrong," "10", "0", "?", etc), the real value of assessment and feedback is when it is constructive and *for* learning (Sadler, 1983). Whilst *more* feedback might satisfy those who monitor education, the focus must be on *better* feedback (Gibbs & Simpson, 2004). Glover and Brown (2006) recognise that an increase in the volume of



marking in higher education, and other factors, means that feedback may be losing its formative function. The challenge therefore is to find methods that are manageable and formative, assisting the learner to move forward and develop. Whether feedback is labelled diagnostic, formative or summative, its purpose can always be to usefully engage the learner.

Good design can often benefit from a foundation of principles; guiding belief statements that allow the designer to evaluate their ideas. Nicol and Macfarlane-Dick (2006) list seven principles. To summarise these, effective feedback to students should: help to clarify what good performance is; facilitate the development of learner reflection (self-assessment); deliver high quality information to students about their learning; encourage teacher and peer dialogue around learning; encourage positive motivational beliefs and self-esteem; provide opportunities to close the gap between current and desired performance; and provide information to teachers that can be used to help shape the teaching. These foundational statements create a guiding design and evaluation framework for the academic. However, providing effective, formative feedback can be challenging. Glover & Brown (2006) recognise that giving feedback can be time consuming for academics and frustrating when students don't use it. For students feedback can be unhelpful when it is difficult to decipher or when it arrives too late.

Media-enhanced feedback can be thought of as a new operational space; one in which feedback looks, sounds and feels different, whilst the fundamental design principles presented by Nicol and MacFarlane-Dick (2006) still usefully guide the academic.

### **Media-enhanced feedback: a conversational design method**

This section provides a series of conversation prompts intended to scaffold a feedback design conversation lasting no more than 30 minutes. The collaborative activity is intended to be fast moving, focused and democratic, resulting in the basis of a feedback design that uses the right media effectively and in a manageable way.

The process begins with two or three academic co-designers quickly writing down initial responses to what the feedback method is, or might be, in a given situation. This can be done immediately with no discussion. The rest of the process involves the group in evaluating and developing these initial ideas by using a set of prompts. Most of the prompts will be useful and challenging. Some are clear and some are intentionally ambiguous and demand more thought. All prompts should be considered and other prompts can be added. They can be addressed in any order that suits the discussion. A short response should be written against each prompt. The prompt sheet should be available to all of those taking part and everyone involved should, ideally, be involved in writing upon it to ensure parity in the process. Groups may even formalise this by insisting that the pen used to write the notes is passed around each time a new prompt is considered. All collaborators should monitor their progress. The notes written during the conversation will help the participants to review their thinking after half an hour, at which point they should write a final, refined statement about the approach they will use.

<b>Table: Prompts for designing media-enhanced feedback</b>	
Our initial idea for feedback is:	
What is feedback? Quickly agree a definition.	
What is special about this assignment, module or programme?	
What is special about this topic or subject?	
What does this assignment have in common with others? What connections should be made?	
How will you integrate the feedback in your teaching?	
Is feedback part of a conversation? If so, how will this continue?	
How much time can be given to producing each piece of feedback?	
How is this feedback plan sustainable?	
How is this feedback plan scalable?	
My studio is my: Lab, Office, Classroom, Home, ..?	
How can you make an impact with the feedback? What specifically do you expect to see as a result?	
Feedback for: Individuals? Groups? Everyone?	
Is the voice best used for giving detailed feedback or for emphasis?	
How can feedback inspire any student?	
Feedback for learning or measuring?	
Would written feedback be better? Or is it just different?	
Why will your voice be helpful?	
Can you combine feedback methods? Voice + Writing? Voice + Photograph? Voice + Screencast? Voice +... ?	
Feedback for... knowledge... motivation... sharing...	
When will students listen?	
Why will students listen?	
Will the feedback be loud or quiet?	
How many times will students listen?	
What will the listener do with this feedback?	
How can the learner respond? Actions, conversations, reflection, ...	
Why will your voice be helpful?	
Who gives the feedback? You? Peers? Employers? The learner? Mentor?	
Feedback is a dialogue. Do you agree?	
Formal or informal?	
When and where is a good time for feedback?	
Do your students know you?	
Do your students know why you are giving feedback?	
Will your students be expecting feedback and will they know what to do with it?	
Will your students know it is feedback?	
How will you introduce the feedback? And, how will you conclude it?	
Are you a BBC producer or an academic? So what's your view on production quality?	
How long can you talk for? How long should you talk for?	
Our revised idea for feedback is:	

These prompts, and others, can be presented on cards, as an A3 handout from a series of *PowerPoint* slides (set the print option to handouts with 3 slides per page with space for user notes), or even as a series of audio prompts.

## Discussion

The prompts in the feedback design method are open-ended and intended to challenge assumptions. The reason for each prompt may be unclear, but each is there for a reason. Part of the conversation may be to find the significance of each prompt and, in doing so, act as a useful challenge. For example, is it always best that the academic is the giver of feedback? Is feedback given at the end of a piece of work? Is feedback sometimes 'just teaching'? Is feedback mostly associated with assignments, or is its purpose sometimes more usefully aligned to learning outcomes, scholarliness, confidence, the learner's experience of learning, notions of 'success' and other, higher, outcomes?

Part of the conversation should support the collaborators in deciding why the digital voice is different to written feedback. Feedback can have different purposes (e.g. corrective, informing, motivational or to promote learner reflection) and it may be better to use different media for these different purposes. In the use of screencast feedback, for example, review comments in the margin of an electronically submitted essay are likely to achieve a different effect to the feedback commentary that amplifies the tutor's thinking process or their need to emphasise particular points.

Feedback often supports meta-cognitive activity and the voice is sometimes the best way of achieving this level of engagement, whilst assessment grids, marginalia and other techniques can be used to address the detailed comments based directly to points arising in the submitted work.

A legitimate outcome of the exercise is that the designers decide not to use digital media at all; however, the intention of conducting a structured design conversation is that it results in a considered, and so meaningful and manageable use of feedback whatever form it takes.

Consideration of the use of digital media can be inspiring, allowing for creativity and resulting in many ideas. This must be moderated by a need to devise methods that are manageable and sustainable. Some innovators will push the boat out to prove that something is possible, but if this cannot be sustained or sets unrealistic expectations on themselves or their peers, it can be unhelpful to all involved, but especially their students. The topic of sustainability and setting appropriate expectations should be addressed carefully. One response to this is to see the introduction of new methods *change* existing pedagogy; not just add to it.

Scalable media-enhanced feedback is a new phenomenon. Anyone using such approaches in the next few years is likely to be breaking new ground. Media-enhanced feedback is happening now because the technology is accessible: the mobile smartphone has a simple high quality voice recorder; MP3 recorders are cheap; video cameras don't need tapes; and software is cheap or free. Above all, all of these technologies have a "red button" interface – press the red button to record and press it again to stop. It is surprisingly easy. These technologies make files that can be immediately shared with the student in the same way that *Word* documents have been shared for years.

## Conclusion

Media-enhanced feedback is adaptable. It can help the academic to provide feedback that is meaningful because it is fitting: it is suitable for the specific contextual requirements as determined by the academic, the learners, the discipline, the time, the place, the emerging strengths and weaknesses of individuals and cohorts, and their desire to learn.

Most academics will not have worked with media like audio, video and screencasting before. As with other unfamiliar uses of e-learning technology, designing pedagogy together around a simply structured conversation can be helpful. Doing so can ensure that technology does not determine the pedagogy, but that it is harnessed effectively. In the case of effective feedback, design conversations can ensure that media-enhanced feedback is clear for the learner, well integrated, and models dialogue, aids learner reflection, is motivating, puts students at the centre and encourages stronger connections between academics and their students.

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Media Enhanced Learning Special Interest Group: [www.melsig.com](http://www.melsig.com)  
ASSET project: <http://www.reading.ac.uk/asset>

