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RESEARCH ARTICLE

Engaging Students with Audio Feedback

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Abstract

Students express widespread dissatisfaction with academic feedback. Teaching staff perceive a frequent lack of student engagement with written feedback, much of which goes uncollected or unread. Published evidence shows that audio feedback is highly acceptable to students but is underused. This paper explores methods to produce and deliver audio feedback to a range of students engaged in a variety of academic tasks with the aim of maximising student engagement while working towards a framework which could increase the use of audio feedback by teaching staff.

Keywords: audio feedback, engagement, technology

Introduction

With substantial investment by Higher Education Institutions (HEIs) in learning technologies such as Virtual Learning Environments (VLEs), the last decade has seen technology increasingly used to mediate between students and teaching staff (Hepplestone *et al.* 2011). While institutions need to recoup investment and manage growing student numbers in a time of financial stringency, it is valid to ask whether technology is the answer or merely generates another problem with feedback on student work, increasing remoteness from teaching staff. With increasing student numbers and the rapid growth of online learning we have yet to replace many of the subtle aspects of the direct personal contact between staff and students which have been lost.

In general, the main problems students report are not with the amount of feedback they receive but with timeliness and perceived relevance. As academic workloads increase, these issues worsen. Yet teaching staff complain about lack of student engagement with feedback and a loss of connection with students. Although electronic forms of feedback have increased in use, much feedback is still handwritten and goes uncollected from student pigeonholes because work is submitted electronically, independent of geography, but feedback has to be collected from a designated location at a specified time. For example, laboratory notebooks from practical classes often contain a mixture of observations such as drawings and writing which is difficult to capture electronically, and consequently difficult to process other than on paper.

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Published evidence suggests that students are well disposed towards receiving feedback in audio form. Students are up to ten times more likely to open audio files online compared to collecting written feedback in person (Lunt & Curran 2009). Feedback is one of the most important aspects of learning (Evans 2013), yet is consistently an area of concern in the UK National Student Survey. Regardless of institution or course, students are significantly less satisfied with the feedback they receive than their overall experience (Hefce 2011). This is not a new problem, the issue has been discussed for years (Gibbs 1992). With more students entering higher education, growing class sizes mean heavier academic workloads and more lag in the system between submission and return of work. Considerable prior attention has been paid to audio recordings as a medium for feedback. Published evidence suggests that audio feedback is highly engaging for students, invoking perceptions that tutors 'cared' more and that this improved student engagement with learning (Ice *et al.* 2007). There is little doubt that engagement with feedback could be improved by the appropriate use of technology. This paper compares technologies designed to foster connectedness between students and teaching staff while minimising academic workload in order to increase the use of audio feedback.

Evidence of the effectiveness of audio feedback is clear from published findings (Macgregor *et al.* 2011, Orsmond *et al.* 2011, Brearley & Cullen 2012). But if audio feedback is so effective, why do not more teachers use it? Although producing audio files is relatively quick, and the rule of thumb appears to be that one minute of audio is equal to six minutes of writing feedback (Lunt & Curran 2009), uploading them to a server and notifying students may take longer than simply annotating a printed essay (Merry & Orsmond 2008). One solution to this is a simple click-record, click-listen system with no additional steps for staff or students to negotiate. This paper investigates and compares several such systems and examines alternative approaches. Dissatisfaction with feedback largely arises from a mismatch between expectations and experience. To be effective, it is imperative that both staff and students know exactly what to expect in terms of feedback. Thus this paper suggests best practice in terms of expectations around audio feedback. The aims of this research are as follows:

1. To improve student engagement with feedback.
2. To make more effective use of staff time.
3. To investigate simple and efficient systems for delivery of audio feedback to large cohorts of students and to enable conversations between students and markers.

As well as exploring student and staff reactions to the use of audio feedback, an objective of this work was to test the acceptability and effectiveness of low cost, lightweight solutions against a dedicated proprietary software package (Turnitin GradeMark). These systems were evaluated on the basis of:

1. Student acceptability, judged by questionnaire responses and interviews.
2. Student utilisation, judged on the basis of file accesses.
3. Staff acceptability, judged on the basis of time taken to record and deliver feedback in each system.

Turnitin GradeMark (turnitin.com) is a dedicated online marking system which can be linked to VLEs such as Blackboard and Moodle. GradeMark is one of the big players in the field of online marking and has recently been upgraded to allow staff to leave audio recordings for students. There is a large institutional financial cost for the use of this system – tens of thousands of pounds per year in licence fees. These tools are not available to individual instructors, only through institutions (if they have paid for them).

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And yet there is little independent research comparing the effectiveness of these tools to much cheaper systems for delivery of audio feedback.

In contrast, online file hosting sites such as SoundCloud (soundcloud.com) or DropBox (dropbox.com) are available to all at minimal or zero cost, depending on what features are required. Dedicated audio sites such as SoundCloud include the capacity to record and share audio files directly, whereas DropBox requires audio to be recorded locally on the user's device and uploaded to the site. Both methods have advantages and disadvantages. Shared files can be made public, or more appropriately for feedback purposes, shared privately via online links. Apart from cost, the major advantage of these file sharing sites is that they can provide instructor feedback by showing when feedback files are downloaded, a major feature missing from Turnitin GradeMark. Another major advantage is flexibility – audio files shared via these sites could be used to give feedback on any type of student work, including student-produced videos, graphic works or even live performances, whereas GradeMark only works with a limited range of inputs, mostly text-based content such as essays or reports.

Methods

Ethical approval for this study was obtained from the University of Leicester before commencement of the study (#nna-6053). No student data, including marks, full names or email addresses were stored in or transmitted via cloud systems outside the University of Leicester computing infrastructure. Online audio files contain only student first names and their feedback. Marks and all other information are recorded locally on spreadsheets or institutional VLEs.

None of the students in this study had any known prior experience of receiving feedback in audio format. In order to investigate the affordances of different modes of audio feedback delivery, three different cohorts of students were given audio feedback on assessed work via three different delivery models.

Year 1 cell biology module (n = 31), 1500 word coursework essay

Turnitin Grademark was used to deliver both text comments and audio feedback to a group of 31 first year Biological Sciences students on a 1500 word coursework essay, the first university essay they have written. As a result, the submissions were quite variable and it was known that students were anxious about this assessment. Accordingly, as much if not more emphasis in the feedback was placed on the technical aspects of the assessment – academic conventions such as referencing and diagrams – as on the content. To minimise drift of attention, audio files were kept deliberately short, with a target duration of one minute, which varied in practice from 40 seconds to just under two minutes where more guidance was needed. To achieve consistency, a standard workflow was devised, as follows. After adding a GradeMark Text Comment giving an overall summary of the work, for consistency, the following script was used to record a short voice comment:

1. Hello <student first name>, this is <marker's name>. I have read your work and here is some feedback for you. You will get your marks for this assignment via the Blackboard Grade Centre on <insert date: seven days after delivery of feedback>.
2. <Record specific comments>.
3. If you would like to discuss anything about your essay, please email me at <instructor's email>.

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Year 2 key skills module (n = 170), 500 word critical appraisal of a scientific paper

SoundCloud was used to deliver audio feedback to Year 2 students on a key skills module (n = 170) for a 500 word critical appraisal of a scientific paper. A typical recording length of one minute was aimed for, with the option of inviting students who needed further guidance to come and discuss their work face-to-face or by email. SoundCloud was easy to use for direct recording of audio feedback, and the private URL created was recorded in a spreadsheet along with the student's mark, email address and personal tutor. This spreadsheet formed the template for an email merge which was used to deliver an email to the student and their personal tutor giving them the link for the feedback recording. Incorrect email addressing was avoided by copying and pasting columns of names and email addresses from VLE registrations into spreadsheets for email merging rather than by typing email addresses. It would be possible to use the spreadsheet template to deliver text comments on the work submitted in addition to the audio link (URL), although this was not done in this example and only audio feedback was given. Figure 1 shows a schematic diagram of the feedback process.

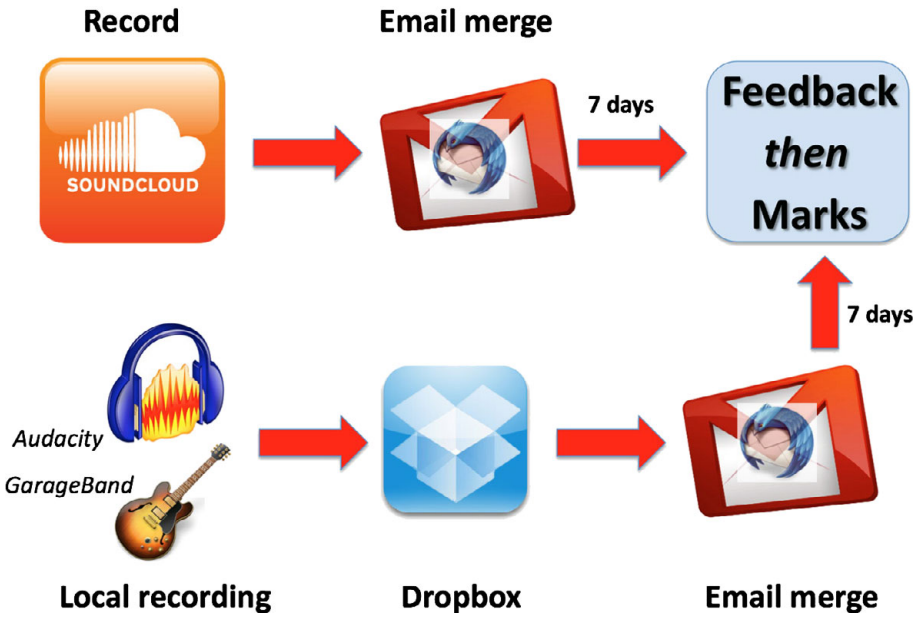

Figure 1 Alternative delivery systems for audio feedback files. A schematic diagram illustrating the process of recording and delivering audio feedback to students.

Year 3 microbiology module (n = 25), final year 3000 word coursework essay, feedback delivered via DropBox

Local recording of audio files with delivery via DropBox and email notification was used to give audio feedback on a 3000 word coursework essay for Year 3 students (n = 25). Free audio recording tools (GarageBand on Macintosh and Audacity on Windows) were used to record audio feedback of three to five minutes duration. The files were uploaded in bulk to DropBox and tracking URLs generated via bit.ly. This information was recorded in a spreadsheet which was used as a template for an email merge informing students of the location of their feedback (Figure 1). This system was the most time-efficient of the three models tested, taking approximately 12–15 minutes per essay, including all post-processing.

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Results

Year 1 cohort

This was the first university essay these students have written. Students were sent a group email informing them that their feedback was available on Blackboard. Informal student comments had already indicated that students found it difficult to find the GradeMark feedback on Blackboard, so a link to a short screen capture video showing how to navigate to the feedback was included in the notification email. In spite of this, a number of students commented they were unable to find their feedback. Of these, 15/31 students (48%) responded to a short anonymous online questionnaire concerning the use of GradeMark for feedback. The responses received were generally positive towards the use of audio feedback, although several students commented that they found it difficult to access their feedback via GradeMark. All the respondents found both the voice comments and the text comments useful:

> I really liked the voice comment. It was useful being able to listen to it again. I would have liked it to be longer and with more improvement points.
>
> It was very useful, I thought [the audio] said a lot about the essay and was more useful than the text comment.
>
> The most useful aspect was that you can access the feedback whenever and I liked the fact that it was interactive and had voice comments.

The Turnitin GradeMark system does not indicate whether students have accessed their audio feedback or not, so it is impossible to accurately assess take-up rates in this system. Although GradeMark indicates if and when students click on their mark in the Grade Centre, it does not allow markers to know whether students have looked at text comments or downloaded the audio file.

Personal tutors were not able to access the student feedback via Blackboard/GradeMark as they were not enrolled on the same modules as the students. Accordingly, personal tutors were sent PDF printouts of the GradeMark text comments as is approved practice, but were not able to access the voice comments in the GradeMark system. The entire process of marking and feedback delivery in this model took approximately 25 minutes for each 1500 word essay, including the time taken to read the essay. The online part in GradeMark took only approximately ten minutes and feedback could then go back to students instantly – the extra time was added by post-processing to try to include personal tutors in the feedback loop. These timings are not sustainable for large numbers of students. However, the major problem with the Turnitin GradeMark system is that it is not possible to deliver student feedback separately from marks, a major pedagogic flaw (see Discussion section).

Year 2 cohort

SoundCloud was found to have major advantages over Turnitin GradeMark. It was much quicker to record and deliver the feedback in this system, taking approximately five minutes per 500 word report (excluding reading time). Students also found it easy to access the audio feedback, including from mobile devices such as phones which play an increasing role as email clients. Students were very positive about the use of audio feedback via SoundCloud:

> I was able to listen to it at home and did not have to collect it from campus – as is the case with written feedback.
>
> It removes the difficulty of reading bad handwriting that lots of markers have!

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> Useful that it's accessible on the computer instead of being on paper, which can be mixed up or lost. The voice was really clear and understandable even for international students.
>
> I found the length of the feedback to be ideal as it was both concise and informative. As it was sent by email, it was extremely easy to access. I was impressed by how quickly we had received the feedback, even before we were able to get the marks for assignment.
>
> You also have to listen to the whole thing as instead of skim reading feedback . . . this is both positive and negative.
>
> I see no weaknesses in this form of feedback rather it was more elaborate than most feedback I have been given in the past. Please use again and tell other staff to do so!

The major pedagogic advantage of this system over Turnitin GradeMark was that feedback could be separated from delivery of marks, preceding it by seven days in this case, which also helped with uptake – 94% of the students in this sample accessed their audio feedback files – a much higher rate than physical collection of written feedback. Some students accessed the file and listened to the recording several times, commenting that it was useful to be able to do this.

Although SoundCloud is available to individuals and does not require an institutional subscription, it is not entirely cost free, although it is considerably cheaper than Turnitin GradeMark, with individual subscriptions costing a few dollars a month. Some lag was also experienced using the SoundCloud website at times, slowing the process of recording feedback. Overall, this method was much more efficient in terms of staff time, more popular with students and more pedagogically sound than Turnitin GradeMark.

However, the format of the relatively short technical reports in this example were more limited in scope than a longer essay, so there was comparatively little variation in the feedback required. Recording 170 separate feedback files was laborious, even though use of individual files allowed personalisation by inclusion of student's first name in the feedback. Overall, this assignment for this large number of students did not fully justify the amount of staff time required to record and deliver individual audio feedback. In contrast, generic audio feedback to the entire cohort, or to groups of students with similar marks, would have been far more efficient in this case.

Year 3 cohort

The students found the DropBox system easy to use. By using a tracking URL rather than the raw DropBox link it was possible to measure file accesses. Ninety-one per cent of the students in this cohort accessed their audio feedback in the seven day period between delivery of the email notification and the publication of marks for the assignment on Blackboard. Student comments included the following remarks:

> The feedback was easily accessible and was given very quick (very much appreciated, thank you).
>
> Most useful aspect: we don't have to keep a paper record of what could have been improved in our essay, and can be accessed at any time.
>
> It was useful as I received feedback which were specific, compared to written feedback which I have noticed tend to be somewhat vague in most parts.

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> The most useful was probably was that the feedback would seem more personal, and therefore feels more comprehensive. However, sometimes having feedback written has its advantages in the ease of re-accessing the feedback.
>
> I would prefer written feedback by email as it is easier to go back over and review. The audio feedback took quite a long time to load on my home computer as my internet is very low speed but this was not a problem on the University computers.

Figure 2 shows the number of times feedback files were downloaded by students. Although it is not possible to know whether the files were listened to, student comments collected via questionnaires strongly support the accuracy of these figures as an indicator that one download equals one listen, particularly on mobile devices (see Discussion section). Multiple file downloads may, in some cases, be the result of impatient link clicking, but at least in others it may represent students listening to the feedback several times over the course of a number of days (via anecdotal evidence such as verbal comments).

An online summary of the results of this project is presented in Cann (2013).

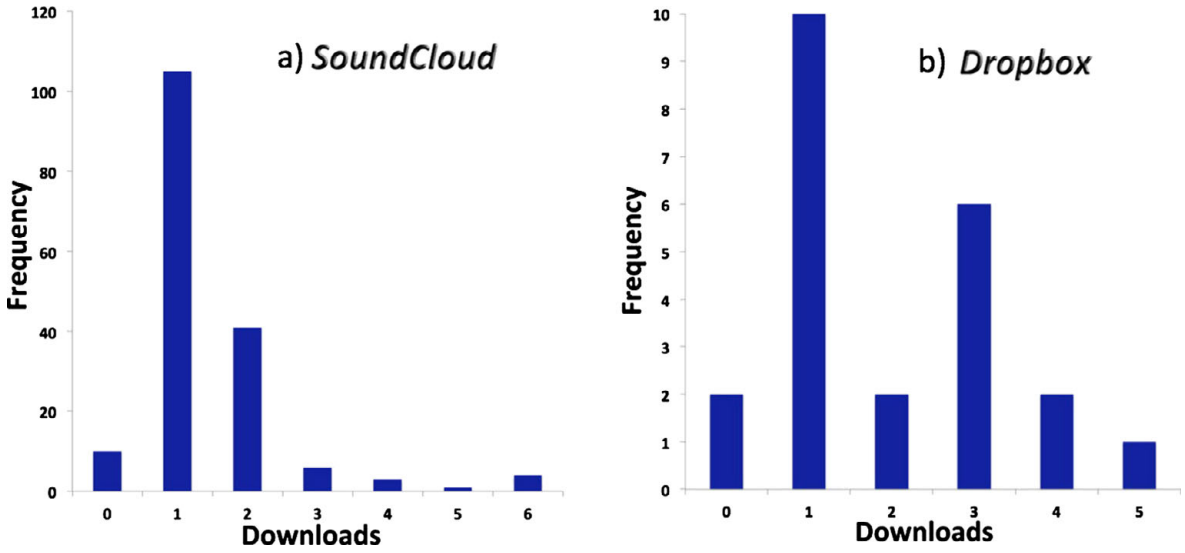

Figure 2 Student downloads of audio feedback files. The graphs show the number of times students downloaded their audio feedback files: (a) SoundCloud, (b) DropBox. Note: Student access data for audio files is not available in the Turnitin GradeMark system.

Discussion

This paper substantially confirms the results of earlier studies (e.g. Rotheram 2009), notably that the use of audio feedback is popular with the majority of students and that use of audio has at least potential to save staff time, particularly when a substantial amount of feedback is given, e.g. on a lengthy essay. This is only true if audio feedback is used as a replacement for text comments, not as an additional supplement (although this modality is also popular with students). Outcomes may vary in different situations and overall, the mode of feedback delivery is possibly not as important as speed of delivery (timeliness) and clear communication to set student expectations of what feedback they will receive and when (Bourgault *et al.* 2013, Gould & Day 2013). However, there are some very clear conclusions which can be drawn from the work presented here and from the literature. Does audio feedback save staff time? Only if used as a replacement for written feedback

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rather than as a supplement. Is audio feedback more engaging for students? Allowing for the novelty element, numerous studies, including this one, say undoubtedly yes.

Separation of feedback from marks

A considerable body of research literature exists which consistently shows that to be effective, feedback should be separated from the return of marks which otherwise dominate student attention (e.g. see Black & Wiliam 1998). If students receive their marks at the same time as or before they receive feedback on the assessment, widespread experience shows that many will not look at the feedback if they are satisfied with their mark, and may only do so if they want to question the mark they have been awarded. The design of TurnitIn GradeMark does not allow this practice, although student work could be marked using GradeMark without marks being entered into the Blackboard Grade Centre, and marks added to the Grade Centre at a later (specified) date. Unfortunately this generates additional staff workload compared with data entry at the time of marking and so is unlikely to be widely adopted. Students in this study did not find the GradeMark system easy to use – even when sent a screen capture video showing how to navigate the system and find their feedback, several students stated that they had been unable to do this. This is in stark contrast with the other designs in this study where links to feedback files were sent to students via email and only one click (or touch on a mobile device – see later) was required to access the recording.

Apart from cost, file sharing sites such as SoundCloud and DropBox have three major pedagogic advantages over GradeMark. The first is that feedback delivery can be structured as the instructor wishes, unlike GradeMark that is structured to deliver the mark to the student before they receive their feedback, meaning that many students will not engage with the feedback. Secondly, SoundCloud, and also DropBox if shortened URLs are used to track downloads, unlike GradeMark, give instructors download statistics so that it can be seen whether the feedback file has been accessed by the student. The final advantage of SoundCloud and DropBox over GradeMark is that they allow audio files to be recorded offline and uploaded to the site so that instructors may mark and record feedback without an Internet connection if they wish.

The SoundCloud and DropBox terms of use do not claim copyright on uploaded materials other than that necessary for the service to host and distribute the content as is standard with social media. Any free external service could disappear overnight or begin to charge unreasonable fees, but institutionally-provided services also change with time and the redundancy of free online file sharing sites means that alternatives are readily available. If more control is required than is provided by the user-friendly free services it would also be possible to set up a local file server, although this would seem to be overkill in the context of the study described here.

Why is audio feedback not more widely used?

Personalised individual audio feedback is not well suited to all types of assessed work. It is ideally suited to longer, more reflective assessments such as essays, and less suited to short, more constrained exercises where group feedback illustrating common strengths and problems may be more appropriate. However, the main reason for lack of take-up is most likely technical inertia – teaching staff who are unfamiliar with new tools remain to be convinced of the potential benefits to both students and to themselves in terms of potential time saving.

In the feedback systems described in this paper, email delivery of links to online file locations rather than audio files themselves was the key. Merry and Orsmond (2008) showed audio feedback to be effective but were essentially defeated by technical issues ‘Pitfalls of this form of feedback included the large size of the audio files (up to 11Mb) being

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incompatible with some e-mail systems.' A simple email merge not only makes it easy to deliver feedback to large numbers of students, a process which would quickly become tedious with individually generated email messages, but also initiates the possibility of a conversation between the student recipient and the marker who has sent the message. The email merge process sends personalised email messages to multiple contacts in one go. Each message has the same content but parts of the message can be customised by inserting fields of data from a spread sheet. All major email programs have the capacity to perform mail merge and instructions are easily available online or via institutional information technology (IT) help services.

During the course of this study it was striking that many students now prefer to access email on mobile devices such as phones. On numerous occasions, emailing the merged messages to students (and inviting further questions both in the recording and in the email message) was followed minutes later by concise, phone-drafted replies asking for clarifications which in some cases developed into email conversations often spanning more issues than covered in the original feedback. Thus the timing of feedback delivery is crucial – not only as soon as possible after the work has been submitted and marked, but to maximise impact, also at time when students are likely to receive and respond to emails and the tutor is available to respond to further questions and engage in a dialogue. Several students mentioned their use of email as a content management system which allows them to file away and retrieve messages. For this reason, thought needs to be given to the use of informative titles for email content, e.g. use of module and course codes in subject lines rather than uninformative titles such as 'Your feedback'.

To summarise the key findings of this project, the following list suggests good practice for the use of audio feedback:

1. Deliver feedback before marks (e.g. seven days), but tell students on what date they will receive their mark for each assignment.
2. Use a reasonable quality microphone – a cheap USB microphone or headset works well, built-in laptop microphones give poor results.
3. Keep recordings short – one minute per 1000 words is a reasonable guide – and file sizes as small as possible by use of audio compression, e.g. mp3 format. Brevity eases bandwidth problems and maximises student attention on the feedback being given. For this reason it is important to invite students to seek further guidance by contacting the tutor in cases where this is required.
4. Begin audio recordings with the student's first name to engage from the outset.
5. Praise good points of the work submitted.
6. Include suggestions for future improvement.
7. Finish with an open question to prompt the student to engage in dialogue about the assessment.
8. Include in both the audio file and the email notification an invitation to contact the marker for further discussion.
9. Test to make sure the recording is accessible via mobile devices if you want students to use it!
10. Use email to send students links to their audio feedback file online, do not send the file itself.

Although some basic technical skills are needed to deliver feedback in this way (e.g. email merge), there are essentially no cost implications involved in some of the online audio feedback models described here. Using such agile, low costs methods has the

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potential to save staff time and overcome technological barriers which may have arisen though increasing use of technology and increasing student numbers. A fundamental requirement of higher education is to facilitate high-quality feedback exchanges (Evans 2013). Yet all too often delivery of feedback is seen as the end point of a process, secondary to marks achieved, and does not lead on to dialogue and increased understanding. Perhaps this is at the root of the widespread student dissatisfaction with assessment feedback in higher education. Technological advances in delivery of feedback are educationally neutral (Hepplestone *et al.* 2011). It is only the relationships between the student and the instructor which can enhance learning. Slowly, a more thoughtful evaluation of the true complexity of the feedback process is emerging (Bastiaens & Stijnen 2012, Gleaves & Walker 2012, Thurlings *et al.* 2013).

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References

Bastiaens, T. and Stijnen, S. (2012) Understanding feedback: a learning theory perspective. *Educational Research Review* **9**, 1–15. doi:10.1016/j.edurev.2012.11.004.

Black, P. and Wiliam, D. (1998) Assessment and classroom learning. *Assessment in Education* **5** (1), 7–74.

Bourgault, A.M., Mundy, C. and Joshua, T. (2013) Comparison of audio vs. written feedback on clinical assignments of nursing students. *Nursing Education Perspectives* **34** (1), 43–46. doi:10.5480/1536-5026-34.1.43.

Brearley, F.Q. and Cullen, R.W. (2012) Providing students with formative audio feedback. *Bioscience Education* **20**, 22–36. doi:10.11120/beej.2012.20000022.

Cann, A.J. (2013) Engaging by talking – audio feedback #HEA13. Available at http://www.youtube.com/watch?v=OL7hxKhVQv8 (accessed 18 December 2013).

Evans, C. (2013) Making sense of assessment feedback in higher education. *Review of Educational Research* **83** (1), 70–120. doi:10.3102/0034654312474350.

Gibbs, G. (1992) *Assessing more students*. Oxford: Oxford Brookes University.

Gleaves, A. and Walker, C. (2012) Richness, redundancy or relational salience? A comparison of the effect of textual and aural feedback modes on knowledge elaboration in higher education students' work. *Computers and Education* **62**, 249–261. doi:10.1016/j.compedu.2012.11.004.

Gould, J. and Day, P. (2013) Hearing you loud and clear: student perspectives of audio feedback in higher education. *Assessment and Evaluation in Higher Education* **38** (5), 554–566. doi:10.1080/02602938.2012.660131.

Hefce (2011) *National Student Survey: findings and trends 2006 to 2010*. Available at http://www.hefce.ac.uk/pubs/year/2011/201111/ (accessed 18 December 2013).

Hepplestone, S., Holden, G., Irwin, B., Parkin, H.J. and Thorpe, L. (2011) Using technology to encourage student engagement with feedback: a literature review. *Research in Learning Technology* **19** (2), 117–127. doi:10.1080/21567069.2011.586677.

Ice, P., Curtis, R., Phillips, P. and Wells, J. (2007) Using asynchronous audio feedback to enhance teaching presence and students' sense of community. *Journal of Asynchronous Learning Networks* **11** (2), 3–23.

Lunt, T. and Curran, J. (2009) Are you listening please? The advantages of electronic audio feedback compared to written feedback. *Assessment and Evaluation in Higher Education* **35** (7), 759–769. doi:10.1080/02602930902977772.

Macgregor, G., Spiers, A. and Taylor, C. (2011) Exploratory evaluation of audio email technology in formative assessment feedback. *Research in Learning Technology* **19** (1), 39–59. doi:10.3402/rlt.v19i1.17119

Merry, S. and Orsmond, P. (2008) Students' attitudes to and usage of academic feedback provided via audio files. *Bioscience Education* **11** (3). Available at http://journals.heacademy.ac.uk/doi/abs/10.3108/beej.11.3 (accessed 18 December 2013).

Orsmond, P., Maw, S.J., Park, J.R., Gomez, S. and Crook, A.C. (2011) Moving feedback forward: theory to practice. *Assessment and Evaluation in Higher Education* **58**, 386–396. doi:10.1080/02602938.2011.625472.

Rotheram, B. (2009) Sounds good: quicker, better assessment using audio feedback. Available at http://www.jisc.ac.uk/publications/reports/2009/soundsgoodfinalreport.aspx (accessed 18 December 2013).

Thurlings, M., Vermeulen, M., Jones, O. and Gorra, A. (2013) Assessment feedback only on demand: supporting the few not supplying the many. *Active Learning in Higher Education* **14** (2), 149–161. doi:10.1177/1469787413481131.

Bioscience Education, Vol 22, Issue 1 (July 2014)
doi:10.11120/beej.2014.00027