CLOSING THE LOOP 21ST CENTURY STYLE: PROVIDING FEEDBACK ON WRITTEN ASSESSMENT VIA MP3 RECORDINGS

*DES BUTLER**

Feedback on student performance, whether in the classroom or on written assignments, enables them to reflect on their understandings and restructure their thinking in order to develop more powerful ideas and capabilities. Research has identified a number of broad principles of good feedback practice. These include the provision of feedback that facilitates the development of reflection in learning; helps clarify what good performance is in terms of goals, criteria and expected standards; provides opportunities to close the gap between current and desired performance; delivers high quality information to students about their learning; and encourages positive motivational beliefs and self-esteem. However, high staff–student ratios and time pressures often result in a gulf between this ideal and reality. Whilst greater use of criteria-referenced assessment has enabled an improvement in the extent of feedback being provided to students, this measure alone does not go far enough to satisfy the requirements of good feedback practice.

Technology offers an effective and efficient means by which personalised feedback may be provided to students. This paper presents the findings of a trial of the use of the freely available *Audacity* program to provide individual feedback via MP3 recordings to final year Media Law students at the Queensland University of Technology on their written assignments. The trial has yielded wide acclaim by students as an effective means of explaining the exact reasons why they received the marks they were awarded, the things they did well and the areas needing improvement. It also showed that good feedback practice can be achieved without the burden of an increase in staff workload.

I. INTRODUCTION

In a much-cited study, John Hattie conducted a comprehensive review of 87 meta-analyses of studies on what makes a difference to student achievement finding that the most powerful single influence was feedback.[1] Feedback enables students to reflect on their understandings and restructure their thinking in order to develop more powerful ideas and capabilities. It facilitates the development of self-assessment or reflection in learning, can deliver information to students about their learning and encourage positive motivational beliefs and self-esteem.[2]

The archetype of personalised feedback on written assessment may be seen as that afforded at Oxford or Cambridge University where the student wrote an essay a week and read it out to his or her tutor in a one-to-one tutorial, who then gave immediate and detailed oral feedback on the students' understanding as shown in the essay. For many Oxbridge students, this was almost the only form of teaching that they experienced: for them, teaching meant the giving of feedback on their essays.[3]

However, in most if not all Australian universities the realities of high staff–student ratios and time pressures make this form of assessment and feedback an unattainable dream. Instead, in

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*   Professor at the Faculty of Law, Queensland University of Technology.

1   John Hattie, 'Identifying the Salient Facets of a Model of Student Learning: A Synthesis of Metaanalyses' (1987) 11 *International Journal of Educational Research* 187.

2   David Nicol and Debra Macfarlane-Dick, 'Rethinking Formative Assessment in HE: A Theoretical Model and Seven Principles of Good Feedback Practice' (2006) 31(2) Studies in Higher Education 199, 201.

3   Graham Gibbs and Claire Simpson, 'Conditions under Which Assessment Supports Students' Learning' (2005) 1 Learning and Teaching in Higher Education 3, 8.

the modern higher education system, 'assessment sometimes appears to be, at one and the same time, enormously expensive, disliked by both students and teachers, and largely ineffective in supporting learning.'[4]

Even where the academic makes the effort to provide detailed feedback, studies of what students do with that feedback offer little encouragement. Feedback is frequently not read at all[5] or not properly understood by students even if they do read it.[6] As Wotjas remarked:

> Some students threw away the feedback if they disliked the grade, while others seemed concerned only with the final result and did not collect the marked work.[7]

Further, as Gibbs and Simpson noted:

> A grade is likely to be perceived by the student as indicating their personal ability or worth as a person as it is usually 'norm-referenced' and tells you, primarily, where you stand in relation to others. A poor grade may damage a student's 'self-efficacy', or sense of ability to be effective.[8]

Sadler summarised the general recommendations that had been made in the literature about the desirable properties of feedback as including the following:

1. complimenting students on the strengths of their works;
2. telling them (gently) about deficiencies, where they occurred, and their nature;
3. telling students what would have improved their submitted productions;
4. pointing them to what could be done next time they complete a related type of response; and
5. throughout aims to be constructive and supportive.[9]

Sadler made further observations concerning the lot of modern academics in attempting to meet these objectives:

> For most teachers, providing feedback with these characteristics is labour intensive and cognitively demanding. They give careful thought to exactness in wording, because the feedback will later stand as a discrete communication that can be accessed multiple times. The volume of feedback for a particular work depends partly on the extent to which the work is deemed salvageable. For those that do seem salvageable, the teacher may provide considerable detail. For high quality work, there may not be much to be said, and for pathologically poor work, it may be difficult for the teacher to know where to begin. Furthermore, because the communication is asynchronous, the teacher has to anticipate how the student is likely to react to both the content and tone of the feedback, and this calls for a significant affective outlay on the teacher's part. Notwithstanding the limited effect feedback often seems to have, conscientious teachers continue to invest heavily in providing it to their students.[10]

By contrast, less conscientious teachers may be inclined to spend little time on the marking exercise, perhaps venturing no further than the occasional tick or cross or scant comment, such as 'good work'. Further, whilst greater use of criterion-referenced assessment (CRA) has enabled an improvement in the extent of feedback being provided to students, the completion of a CRA

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4   Ibid 11.

5   Dai Hounsell, 'Essay Writing and the Quality of Feedback' in J Richardson, M Eysenck and D Warren-Piper (eds), *Student Learning: Research in Education and Cognitive Psychology* (Open University Press, 1987).

6   Mary Lea and Brian Street, 'Student Writing in Higher Education: An Academic Literacies Approach' (1998) 23(2) *Studies in Higher Education* 157.

7   Olga Wotjas, 'Feedback? No, Just Give us the Answers' *Times Higher Education Supplement* (London), 25 September 1998; see also Christopher Winter and Vanessa Dye, 'An Investigation into the Reasons Why Students Do Not Collect Marked Assignments' [2004] *University of Wolverhampton Learning and Teaching Projects 2003–2004* 133.

8   Gibbs and Simpson, above n 3, 11.

9   Royce Sadler, 'Beyond Feedback: Developing Student Capability in Complex Appraisal' (2010) 35(5) *Assessment & Evaluation in Higher Education* 535, 538.

10 Ibid.

grid alone is not an adequate substitute for personalised feedback. Similarly, generic feedback on an exercise can reduce the extent of ownership which students take over the feedback they receive, even where that generic feedback is detailed. Each student is still an individual person and ought to be treated as such.[11]

What is needed is a methodology for providing feedback that has the desirable properties discerned by Sadler but which is achievable by modern academics juggling the demands of high staff–student ratios and competing time pressures.

II. The Personalised MP3 Feedback Process

Technology offers an effective and efficient means by which personalised feedback may be provided to students.[12] In 2010, the 112 final-year students studying the elective, Media Law, at the Queensland University of Technology were required as part of their assessment to complete a 2000-word written assignment in groups of two or three. Distance external students were given the option of either submitting assignments on their own or as part of a group. Groups were formed using the collaboration tools provided by the unit's Blackboard website. In lieu of written comments, feedback on most of these assignments was provided by way of a CRA sheet and oral comments recorded in MP3 format using free *Audacity* software.[13] To facilitate a comparison between this methodology and traditional written feedback in terms of workload from an academic's perspective, a control group of assignments received written comments in lieu of MP3 feedback.

Audacity offers both basic recording features, of the kind that most academics will readily recognise such as record, pause and stop buttons. It also enables more advanced functions such as audio mixing. Audio may be recorded (or 'exported') in either wav or MP3 formats; although the latter, being a proprietary format, requires a plug-in. This can be easily downloaded from a separate website, which is linked to the *Audacity* download site.

In each case, the marking process involved reading the hard copy assignment and making only minimal markings on the pages (such as circling words or placing lines or squiggles besides passages), followed by completion of a CRA sheet. Comments and feedback were then recorded, expanding and explaining the minimal markings on the pages. These observations were also linked to the completed CRA sheet. The recording was then saved to the marker's hard drive under the joint surnames of the students involved.

Once this process was completed for all assignments, a generic email message was composed. Using the email facility in the unit's Blackboard website, the generic email message was copy and pasted, personally addressed and sent to each student with the personalised MP3 feedback as an attachment.

Reading the assignments in the control group, making written comments and completing the CRA sheet took on average 22:26 minutes. By comparison, the average time for reading the assignments in the survey group, completing the CRA sheet and recording the MP3 feedback was 18 minutes. The average length of the MP3 feedback was 7:20 minutes. Emailing the MP3 files via the unit's Blackboard site took on average 90 seconds, making a total of 19:30 minutes for the MP3 feedback methodology.

III. Student Response

Part of the generic email message asked those students who received MP3 feedback to follow a link to an online survey instrument. This survey comprised both questions using a 6-point Likert

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11 Phil Race, Using Feedback to Help Students Learn (11 July 2011) The Higher Education Academy <http://phil-race.co.uk/wp-content/uploads/Using_feedback.pdf>.

12 For a similar study see Tom Lunt and John Curran, '"Are You Listening Please?" The Advantages of Electronic Audio Feedback Compared to Written Feedback' (2010) 35(7) *Assessment and Evaluation in Higher Education* 759.

13 *Audacity* is available for download from <http://audacity.sourceforge.net/>.

scale (5 representing 'Strongly Agree', 1 representing 'Strongly Disagree', and 0 representing 'Not Applicable') and open-ended questions. There were 38 responses to the survey, representing a 61 per cent response rate for those students who received MP3 feedback.

Students were first asked to address two preliminary points concerning their use of the MP3 feedback. First, students were asked to respond to the statement: 'I experienced no technical problems in playing the MP3 feedback file.' Student responses were as follows:

Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Not applicable	Not answered
87%	5%	0%	0%	2.6%	2.6%	2.6%

A total of 92 per cent of respondents had no difficulty receiving and listening to the feedback provided by MP3 file.

Students were also asked to advise how many times they had listened to the MP3 feedback. They answered as follows:

Never	Once	Twice	Three times	More than three times	Unanswered
0%	50%	44.7%	5.3%	9%	0%

Half the students listen to the MP3 feedback more than once, while the other half only listened to it only one time.

Next, students were asked a series of questions regarding their perceptions of MP3 recordings and their value as a means of providing feedback on written assessment.

First, they were asked to respond to the statement: 'A recorded MP3 feedback file was an effective way to receive feedback on my written work.' Students responded as follows:

Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Not applicable	Not answered
65.8%	34.2%	0%	0%	0%	0%	0%

One hundred per cent of respondents considered MP3 recording to be an effective way of receiving feedback on their work.

Students were also asked to respond to the statement: 'The MP3 feedback helped me to understand the mark I received for my work.' They replied thus:

Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Not applicable	Not answered
76.4%	23.6%	0%	0%	0%	0%	0%

Again, all respondents thought that the MP3 feedback helped them to understand why they got the mark that they were given.

Students were then asked to compare this method of receiving feedback to traditional methods by responding to the question: 'A recorded MP3 feedback file was a more effective way to receive feedback on my written work than written comments.' Their responses were as follows:

Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Not applicable	Not answered
71.3%	23.6%	5%	0%	0%	0%	0%

A total of 95 per cent of the students preferred MP3 recordings over written comments as a more effective means of receiving feedback.

Students' disappointment with the feedback they had received in the past was reflected in the following comments:

> I have been hugely disappointed in other subjects when I receive a low or average mark and there is no feedback on the assignment other than a tick or a cross.

> Written comments are often very short, can appear cryptic and often seem to just point out things that are wrong without helping to understand why they are wrong.

Even where the academic goes to some lengths to provide detailed comments, these efforts may be thwarted if students are unable to understand the writing:

> I usually have trouble deciphering others handwriting or what their corrections mean.

Such disappointment may in turn breed bad habits:

> I usually never bother to pick up my assignment.

> I often find myself submitting an assignment then purposefully forgetting about it.

By contrast, students were more inclined to take notice of feedback provided in an MP3 recording:

> This is a very effective method of delivering feedback. Personally, I do not usually collect assignments that I have submitted — meaning that I never really get the feedback. In contrast, I listened to this feedback with a copy of the assignment in front of me — and it was very helpful.

Students appreciated the detailed critique of their work that an academic is able to provide via an MP3 recording:

> Sometimes with assignments I'm at a loss as to why exactly I did well or badly and it was really nice to have my specific assignment looked at in detail.

> This is a great initiative, and is the most comprehensive assignment feedback I have received ... It was really good to get an explicit explanation of the things we did well, and the areas that required substantial improvement.

This in turn led to a better understanding of the subject material:

> The audio feedback did help to understand the areas that need further work and will certainly assist the learning process.

> It is more effective for me given that I usually have trouble deciphering others handwriting or what their corrections mean. When listened to in conjunction to the corrections marked on the hard copy then it provides for a well rounded understanding of what was done well and what wasn't in regards to the assignment.

The MP3 feedback was for some a near substitute for an Oxbridge style one-on-one tutorial:

> I think this is fantastic!!! By far the best feedback I have received so far in my degree ... It really gave us back what we normally miss out on — which is the opportunity to ask the marker one-on-one where we went wrong.

> Almost as good as having a face to face discussion about the mark.

> I've never gone to question my mark on an assignment before so I felt that this gave me a better/fuller understanding of why the marks were given in different areas. It was almost like a mini consultation.

For some, the personalised nature of the feedback also made for a closer connection with the faculty, particularly for those studying at a distance and without the benefit of regular face to face contact with staff:

> I loved it! As an external, it was great — it felt more personal and gave a greater connection to the uni (particularly when feedback on some assignments is non-existent except for the mark).

IV. Reflections and Directions

It would seem self-evident that an academic can speak faster than he or she can type or write. This may especially be the case for those academics who by virtue of their discipline may be comfortable expressing their thoughts in words, such as law or medicine. That translates to an ability to provide more substantial feedback in the same amount of time. Email, including that forming part of the group/collaborate tool in a learning management system like Blackboard, enables the audio file to be quickly and efficiently delivered to the student, who not only is spared the challenge of deciphering the academic's handwriting but also has the advantage of hearing the way the words are spoken:

> I found the MP3 feedback very helpful as it allows us as students to really find out what the marker thinks of our work as we can hear his tone of voice.

However, while audio feedback adds a dimension that is more personal and rich in terms of tone, it can also seem more real and potentially upsetting. It is important to remain constructive and supportive, taking care both in terms of the choice of words and the way in which they are expressed. As Race recognised,[14] words with 'final language' implications such as 'weak' or 'poor' may cause irretrievable breakdown between the academic and student. Indeed, even positive words such as 'excellent' have the potential to cause problems when feedback on the next piece of work only attracts a comment that it was 'very good' because it may prompt the question why it was not excellent again. Instead, it is better to praise exactly what was considered very good or excellent in more detail, rather than taking a short cut of merely using the adjectives. The importance of the words used and the way that they are spoken was recognised by a number of students. One commented:

> Although I think MP3 is a great way of receiving feedback, I think you should be careful in your approach because it is difficult for people to 'hear' exactly what you thought of their work which they spent a lot of time on. It is especially difficult when students don't really have the avenue to respond in their own defence.

Another expressed a similar view:

> Although it is really beneficial it is also quite difficult to receive oral feedback when it is not complimentary. So receiving feedback via MP3 is probably going to be difficult for those people, like myself, who have obviously made errors in their assessment. This is not criticism of the method in which feedback is given but is a suggestion in the way that the actual content is delivered such that there should be awareness as to the impact that particular negative comments will have on a person who has made errors.

However, sometimes 'tough love' is both warranted and appreciated. The student who received the 11:55 minute MP3 feedback made the following comments:

> I would just like to say thank you. I only got 9/20, the lowest mark I have ever received on an assignment. While I was going red with embarrassment listening to the comments on the tape, it was exactly what I needed. Despite trying very hard throughout my degree, I have always been a pass average student. The MP3 file showed me clearly where and why I went wrong. I am in the second last semester of my degree, I only wish this was brought in sooner and I struggle to get a job due to my 4.5 GPA (sic). This is certainly not due to effort, I always try my butt off, but I have obviously went about answering assignments and exams incorrectly and as an external I felt a little isolated. So while it hurt my pride, the cold hard facts, from the bottom of my heart thank you, because I appreciate greatly the direction.

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14 Race, above n 11.

The audio files can also be replayed to aid comprehension. Students often face interpretive challenges when trying to capitalise on written feedback. For example, if an academic writes the comment 'this does not follow logically from what goes before', a student who lacks the tacit knowledge necessary to identify that aspect of their work to which the feedback refers may not be appreciate the problem with the logic and as a consequence take no action to address the failure in future work. A proper explanation of why the logic does not follow may require a paragraph of explanation which the academic may not be able to afford the time to compose nor see as necessary.[15] By comparison, audio feedback affords the academic the opportunity to provide a more detailed explanation of the comment that enables the student to make the necessary connections to properly understand the point being made.

A number of practical lessons may be derived from the experience of providing personalised MP3 feedback to the Media Law students. *Audacity* is an easy-to-use program but first-time users may find it worthwhile to first experiment until they became comfortable with the software. This includes the steps needed to delete any unwanted disruptions in the recording. Naturally, a good quality microphone and a quiet environment where the academic will not be disturbed by telephones or other distractions are recommended.

If email is to be used as a means of delivery there may be an issue concerning the maximum size of the audio file as an attachment. The *Audacity* default bit rate is 128 bits per second (bps). At this rate one minute of audio will be approximately 1 MB in size. The bit rate can be changed by opening 'Preferences' in the program's 'Edit' menu, and then under the 'File Format' tab changing the bit rate to 32 bps without greatly sacrificing sound quality (see Figure 1). This would reduce the size of a one minute recording to about 235 KB. This enables the average size of the recordings to be kept to about 6–7 MB, which should be within common maximum sizes for email attachments.
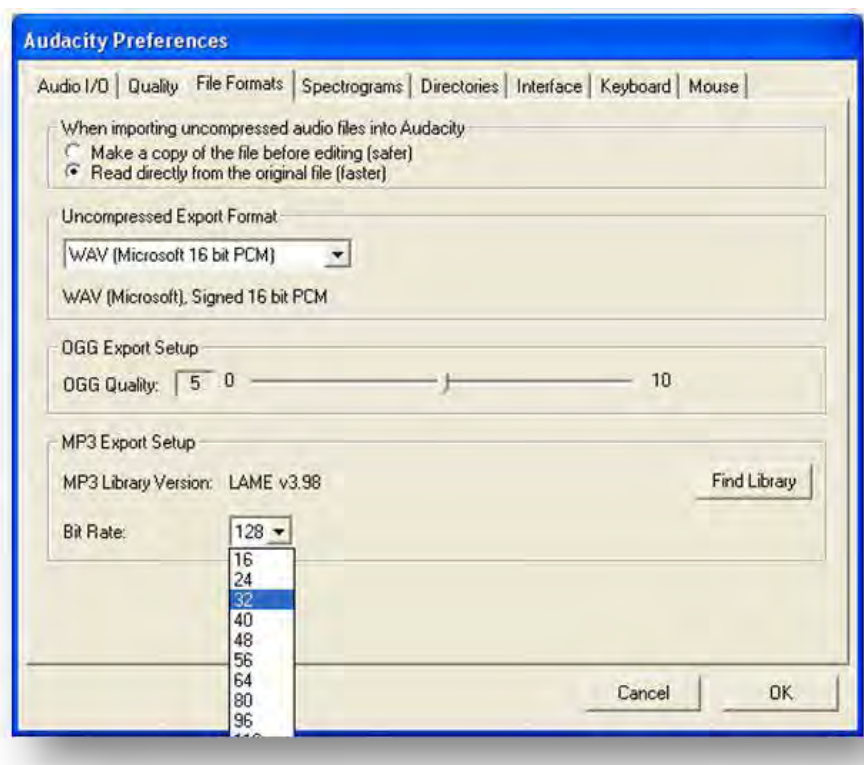

Figure 1: Changing the *Audacity* bit rate

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15 Sadler, above n 9, 539.

Audio files not only facilitate the provision of more detailed explanations of where students are in error, but also where students have done well. The expanded opportunity to both compliment good work and to seek to inspire improvement can make the marking process a satisfying one for the academic.

While MP3 feedback can be personalised by addressing students by name, the audio files may include some common elements. For example, in the Media Law trial, the audio typically included words to the following effect:

> Let's go through your assignment together to see why I gave the mark that I gave you ...

> The main parts of the assignment you should have considered were ...

and ended with a similar summary of important points to bear in mind for the coming exam such as:

> Always be careful to identify distinct imputations and be specific in the meanings that you assign to them.

> Remember that the public interest defence in s 30 is very important for a media defendant.

While it was initially thought that such common passages could be recorded in advance and added to each audio file, as it transpired it was much quicker to simply recite the words anew in each recording.

There are two sides to feedback being manageable. From academic's perspective, designing and delivering feedback can be an exercise that can consume a vast amount of time. But also from the point of view of students, too much feedback can result in an obfuscation of the message, making it difficult to sort out the important feedback from the routine feedback and reducing their opportunity to benefit from the feedback that they need most.[16] In the Media Law trial, there was no necessary correlation between the length of the recording and the size of the mark awarded. For example, the longest audio file was 11:55 minutes long and was for an assignment that was awarded 9 out of 20. By contrast, the second longest recording, which was 11:28 minutes long, was for an assignment which received 19 out of 20, the equal highest mark. The other mark of 19 out of 20 was for an assignment that attracted feedback that was 4:30 minutes long, the second shortest of the recordings. The important consideration is for the feedback to be as detailed and meaningful as possible. As one student commented:

> I think the length was good ... my concern would be if it was rolled out across subjects with more students the temptation would be to make the recordings even shorter.

V. CONCLUSION

The traditional approach of providing written feedback on written assignments can be an inefficient and ineffective exercise. It can consume a large amount of an academic's time and, no matter how detailed, may not even be read by students who may have been disappointed by the extent or quality of feedback on past assignments. Even where a student takes an interest in the feedback that has been provided there may be difficulties properly understanding the nuances of the written words and making the connections necessary for an improvement in their performance.

By contrast, providing personalised MP3 feedback using the freely available and free-to-use *Audacity* program is capable of achieving the goals of effective feedback identified in the literature. It allows feedback to be personally directed, complimenting students on the strength of their work while explaining any deficiencies. It enables academics to identify in detail what would have improved their submitted work and what needs to be done next time. It allows the academic to be constructive and supportive, not only by the words used but by the way they are

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16 Race, above n 11.

spoken. And since most academics speak faster than they write or type, it can achieve those ends in no more time than traditional approaches.

The trial of providing personalised MP3 feedback on written assignments in Media Law received strong endorsement from those students who received feedback in that form. Although the sample of students involved was comparatively small, a number of valuable lessons were learnt. Students appreciated the personal nature of the feedback, which some likened to a one-on-one consultation. They were able to make connections that improved their understanding. They were also able to obtain a clear understanding of exactly why they received the mark they were awarded and what they needed to do to improve their performance. The success of the trial led the author to expand the use of MP3 feedback to giving feedback on higher degree research. The following comments by a doctoral candidate capture the attractions of this approach:

> The MP3 recording is better feedback for drafts because it retains the nuances of the lecturer's meanings where written comments cannot. I found the feedback to my thesis chapters much more helpful in this format. When I read written comments from my supervisors, I supply a range of meanings according to my temperament, the time of day, my self esteem and so on. When I listen to the audio feedback, I get more of Professor Butler's meanings and few misunderstandings of my own making.

Technology has transformed, and is transforming, legal education and higher education in the 21st century. Providing comments by MP3 audio file is a further step in this evolution that is capable of delivering personalised and detailed feedback in a more effective and efficient manner than possible through traditional written comments.