Evaluating written, audio and video feedback in higher education summative assessment tasks

Josh McCarthy
University of South Australia

This paper evaluates various feedback models utilised for summative assessment tasks for tertiary digital media students at the University of South Australia in Australia. The aim of this research project was to establish the advantages and disadvantages of each technique, and to determine which model provided students with more insight into their academic performance. In the first half of 2014, in the course *Design Language in Media Arts*, three different summative feedback models were trialled: written feedback; audio feedback; and video feedback. 77 first year students participated in the learning experiment where a different feedback model was utilised for each of the three major assignments in the course. The three summative feedback techniques were evaluated at the end of the semester in the form of an online survey, which provided participating students with the opportunity to critically reflect on the learning experience. The findings of the study are discussed in light of the growing use of non-traditional feedback measures in higher education, and provide insight into the advantages and disadvantages of each model, from both student and staff perspectives.

Assessment and feedback in higher education

It is widely recognised that assessment is essential to student learning in higher education, and that feedback is a central aspect of the assessment process in terms of elevating student performance and achievement (Biggs, 2003; Bloxham and Boyd, 2007; Gibbs and Simpson, 2004; Harris, Brown and Harnett, 2014; Lunt and Curren, 2009). Moreover, high quality and timely feedback, both in formative and summative form, are crucial features for enhancing effective student learning and in developing strong relationships between staff and students (Crook, Mauchline, Maw, Lawson, Drinkwater, Lundqvist, Orsmond, Gomez and Park, 2012; Irons, 2008). As Gould and Day (2013) note, the use of effective feedback by teachers provides the foundations for learner autonomy and a framework for high achievement. Effective feedback is essential as the scaffolding that enhances learning. Merry and Orsmond (2008, p11) suggest "the language of feedback enables students to achieve goals to a greater extent than they would without peers or tutors". Feedback should relate to performance in terms of goals, criteria and expected standards (Nicol and MacFarlane-Dick, 2006) and should also be timely, detailed and specific. Narciss (2008) defines feedback as "all post-response information that is provided to a learner to inform the learner on his or her actual state of learning or performance" and differentiates between external (peer or teacher) and internal (the learner) sources of feedback. Mory (2003) outlines four areas where feedback supports learning:

- Feedback can be considered as an incentive for increasing response rate and or accuracy;

- Feedback can be regarded as a reinforcer that automatically connects responses to prior stimuli (focused on correct responses);
- Feedback can be considered as information that learners can use to validate or change a previous response;
- Feedback can be regarded as the provision of scaffolds to help students construct internal schemata and analyse their learning processes.

Gibbs and Simpson (2004) outline six key drivers where feedback positively influences student performance:

- Feedback is sufficient in frequency and detail;
- Feedback is focussed on students' performance, on their learning, and on the actions under students' control, rather than on the students themselves;
- Feedback is timely in that it is received while it still matters and in time for application;
- Feedback is appropriate to the aim of the assessment and its criteria;
- Feedback is appropriate in relation to students' conception of learning, of knowledge and of the discourse of the discipline;
- Feedback is attended to and acted upon.

Despite current literature outlining the importance of high quality and timely feedback, it has been recognised globally that there are significant obstacles in terms of delivering such feedback, as well as engaging students with the assessment-feedback process (Bevan, Badge, Cann, Willmott, and Scott, 2008; Crook et al, 2012; Merry and Orsmond, 2008). For many students, feedback can often be provided in a manner which they feel is too late to be useful, too vague, unclear and inconsistent (Glover and Brown, 2006; Weaver, 2006). Feedback can often be misunderstood, particularly by international students, via illegible handwriting or language differences (Price, 2007; Walker, 2009), or simply ignored (Mutch, 2003). For staff, the provision of feedback can be a highly repetitive process and is frequently time consuming, particularly with large class sizes, making the delivery of 'timely' feedback a hard task to achieve.

Feedback for summative assessment

Summative assessment involves the evaluation of participants and summarises their progress at a specific time within a course or program through feedback and a grade (Scriven, 1967; Taras, 2005). The focus of summative assessment is on the outcome of a task, such as an exam or assignment, and seeks to monitor educational outcomes (Shepard, 2005). Summative assessment is considered as *assessment of learning* rather than formative assessment which is *assessment for learning*. Assessment rubrics, based on a set of standards, expectations or criteria, are often used for summative assessment. These rubrics can be provided to students before they start working on the assessment task so they are aware of the key criteria and their subsequent weighting. Rubrics are also utilised by teachers during the marking and feedback stages, leading to an objective final grade, by

following the same criteria students used to complete the project. Summative assessments are given to students at the end of a set time period, or at the end of the semester, to assess what has been learned and how well it was learned.

Feedback is central to the learning experience, and providing written comments on students' assignments is seen as a key feature of feedback processes for summative assessment in higher education (Nicol, 2010). Despite this, researchers have highlighted several difficulties students face in relation to understanding such feedback (Blayney and Freeman, 2004; Duncan 2007; Higgins, Hartley and Skelton, 2002; Merry and Orsmond, 2008). Duncan (2007) notes that written feedback can often focus on mechanical aspects of the submission, such as spelling and grammar, rather than concentrating on the core of the work. Duncan also found that written comments could be vague, such as "use a more academic style"; illegible if handwritten; inconsistent in quality and quantity across a range of tutors; and could focus on positive and encouraging comments at the expense of clear advice on how to improve the quality in subsequent work. Duncan's findings are consistent with numerous prior investigations that have analysed students' perceptions of teacher comments (Crook et al, 2012; Lizzio and Wilson 2008; Orsmond, Merry, and Reiling 2005; Poulos and Mahony, 2008).

Alternatives to traditional feedback mechanisms

In response to the problems outlined above, several alternatives to traditional feedback mechanisms, for both summative and formative assessment, have been explored. The use of audio for feedback delivery has become popular in higher education over the past decade and, in several cases, has been found to be of significant value to students for a range of reasons (Emery and Atkinson, 2009; Francis, Shannon and Murison, 2008; Ice, Curtis, Phillips and Wells, 2007; King, McGugan and Bunyan, 2008; Merry and Orsmond, 2008; Nortcliffe and Middleton, 2008; Ribchester, France and Wheeler, 2007; Rotherham, 2008). Merry and Orsmond (2008) found that students appreciated audio feedback because it was perceived as being of good quality; was easier to understand; had more depth; and was more personal than written feedback. Within the same study, associated staff found audio feedback particularly valuable to explain complex ideas, and by adjusting the volume or tone of their voice they could highlight specific points and, consequently, more understanding could be gained from the spoken word than written text. Ribchester et al (2007) noted that audio feedback facilitated increased discussions between staff and students as it was perceived to be more personal and involved. This idea is supported by Ice et al (2007) who found students felt audio feedback was more supportive and caring than written feedback, and reported a greater understanding of comments; as well as Middleton, Nortcliffe and Owens (2009) who found that audio feedback was seen as conveying more than just words – tone, expression, pronunciation and emphasis all added to the depth of the communication. Furthermore, Emery and Atkinson (2009) noted that one minute of audio feedback was equivalent to approximately 100 words and provided a more in-depth and detailed review of the students' work than written feedback. In their study they found that audio feedback was also more likely to include suggestions for how

to improve work, rather than just identifying the problems, because it was faster to narrate such issues rather than write them down.

Video feedback, as well as other video-based learning techniques, have also been successfully incorporated into teaching and learning in higher education in recent times (Abdous and Yoshimura, 2010; Abrahamson, 2010; Bracher, Collier, Ottewill, and Shephard, 2005; Cann, 2007; Henderson and Phillips, 2015; West and Turner, 2015). Cann (2007) notes that videos have a broad acceptance amongst students and can offer a richer format for feedback provision than audio or written techniques. Henderson and Phillips (2015) suggest students found video-based feedback to be more individualised and personalised than text-based feedback, while West and Turner (2015) note that video feedback can be easier to comprehend and act upon. As video is a visual medium it has the potential to enhance learning in different ways to other technologies, including the potential for demonstrations; i.e., seeing as opposed to being told how to improve subsequent coursework (Abrahamson, 2010). A further advantage is that, like audio, video files provide a permanent record, which can be stored online and replayed at the students' convenience, as opposed to handwritten feedback forms which can be lost or damaged.

Research aim and questions

This paper evaluates different feedback techniques utilised for summative assessment tasks for tertiary digital media students in the course *Design Language in Media Arts* at the University of South Australia in Australia. Specifically, this paper reports on the use of audio, video and written feedback, and aims to establish the advantages and disadvantages of each technique, and to determine which model provides students with more insight into their academic performance. Within this aim are several research questions:

- Which of the three feedback models do students find more engaging?
- Which of the three feedback models do students find easier to comprehend?
- Which of the three feedback models do students find easier to access?
- Are the three feedback models easy to produce and distribute in a timely manner?
- What are the workload implications on course staff, for providing each of the three feedback models?

Method

The study was conducted in the first half of 2014 within the course *Design Language in Media Arts* at the University of South Australia in Australia, and included 77 students. Three different feedback models, audio, video and written-based, were trialled for summative assessment during the semester.

Within the course there were three summative assessment tasks, spaced evenly during the semester, as well as a series of weekly formative assessment tasks. The formative assessment tasks were completed both online and in class during tutorial sessions. Every two weeks, students submitted work-in-progress imagery to a gallery in the course's online

learning environment, hosted by a Facebook application called '*the Café*', and provided critiques on their peers' submissions.

When critiquing their peers, students were asked to address explicit assessment criteria related to the task, and to be constructive in their commentary, focusing on elements they considered to be successful, as well as areas for improvement and further consideration. All critiques were required to be at least 50 words in length and it was mandatory for students to respond to critiques in order to establish a dialogue between peers. Online submissions and critiques were linked to the summative assessment tasks in the course and timed so that students were able to address their peers' critiques, and consider making changes to their work. In alternating weeks, students brought work-in-progress to tutorials and discussed their work with both peers and staff. During these sessions, the cohort broke into small groups of four or five students, discussed their work under the guidance of the tutor, and provided critiques, comments and suggestions to their peers face-to-face. These group discussions lasted approximately 20 minutes at the start of each session, where upon students then worked individually and had one-on-one sessions with the tutor, enabling the provision of staff feedback. Participation within these formative assessment tasks was worth 15% of the final grade for the course. Students were not required to grade their peers within the online and in class peer feedback models.

The three summative assessment tasks were due for submission in weeks 5, 8 and 13 respectively. The first assignment provided students with the opportunity to produce a small section of a music video, exploring the photographic technique 'pixilation'. The second assignment allowed students to produce a print marketing strategy for a design exhibition. For the third and final assignment, students were required to explore the design theory and techniques of a specific designer, produce their own design work, and then display their findings in a digital presentation. It was decided that audio feedback would be provided for the first assignment, video feedback for the second assignment, and written feedback for the third assignment, as each feedback technique lent itself to the focus of the assessment task.

Prior to the start of the course, several audio and video recording software packages were trialled and assessed to determine which would be best suited to the learning experience. Three audio recording software packages, *Audacity*, *RecordPad* and *Adobe Audition* were tested. Several factors were taken into consideration when choosing the software package to use, including accessibility; cost; editing capabilities; and available output formats. *Audacity* was eventually chosen as the most suitable program to use for this research project as it featured comparable editing capabilities to both *RecordPad* and *Adobe Audition*, as well being able to output to .mp3 format, a high quality and small file size format. *Audacity* is also free to use, whereas *RecordPad* ($29.99) and *Adobe Audition* ($143.88 per annum as part of an *Adobe CC* licence) are not.

Three video recording software packages, *CamStudio*, *Snagit* and *Camtasia Studio* were also trialled prior to the commencement of the semester. Again, several factors were taken into account to determine which program would be used in the study, specifically the availability and subsequent quality of audio recording; the ability to record the entire

desktop; drawing capabilities; editing capabilities; and available output formats. *Camtasia Studio* was chosen as the most suitable package, as it featured superior recording and editing capabilities to the other two programs. Despite being significantly more expensive at $179, compared to *CamStudio*, free, and *Snagit*, $29.95, the ability to export as an .mp4 file, was seen as crucial to the research project. This ensured that video feedback files could be produced at a high resolution and could run for several minutes, while only being three to four megabytes in size. This was very important in the context of the research as the feedback files were required to be uploaded to the course's learning management system and then sent to students. Small file size enabled the videos to be uploaded and accessed by students relatively quickly.

The first piece of summative assessment was submitted by students in the fifth week of the course and, in line with university policy, feedback and grades were required to be distributed to students within two weeks. The feedback process involved viewing all student submissions to attain an understanding of the general quality of work and then individually assessing each submission against the assessment criteria. The process of assessing each student's work took approximately 10 to 15 minutes and included the course lecturer viewing the student's submission several times (a music video) and taking written notes. Once this had been completed, the assessor then opened *Audacity* and provided verbal feedback for a period of between one and two minutes. After the feedback had been recorded, it was reviewed; edited or re-recorded if necessary; then exported as an .mp3 file; uploaded to the course website; and sent to the student.

The second piece of summative assessment was submitted by students in the eighth week of the course and the assessment process was similar to that of assignment one, with staff first looking at all of the submissions and then assessing the students one by one. The process of assessing each student's work took approximately 20 to 25 minutes - almost twice as long as the audio feedback - and included viewing the student's submission several times (graphic design posters) and writing notes. When this had been completed, the assessor opened *Camtasia Studio* and recorded narrated, visual feedback, which included critiquing the student's designs in *Photoshop* for a period of between three to four minutes. Once the feedback had been recorded, it was then reviewed; edited if necessary; exported as an .mp4 file; uploaded to the course website; and sent to the student.

The third and final piece of summative assessment was submitted by students in the 13th week of the course and the assessment approach followed that of the first two submissions. The process of assessing each student's work took approximately 20 minutes – longer than the audio feedback, though less than the video feedback - and included viewing the student's submission several times (a .pdf design presentation); providing written feedback in the form of open-ended comments; and charting the student's performance against the specific assessment criteria in the form of a rubric. Once the feedback had been written, it was then reviewed; edited if necessary; uploaded to the course website; and sent to the student.

The student experience

The student experience during the semester was evaluated through an online, post semester survey. Students were invited to take part in the survey over a two-week period at the conclusion of the semester. The questionnaire was designed and distributed under the approval from the Human Research Ethics Committee at The University of South Australia. The questionnaire included demographic topics, such as gender, age and student type, and allowed students to consider and compare the three different feedback models used for the summative assessment tasks during the semester. This included assessing the perceived effectiveness of the feedback models, raising issues such as accessibility, comprehension, engagement, and knowledge transfer. 58 students participated in the survey, providing a response rate of 75%. Participants were given the opportunity to assess the feedback models in the form of Likert-scale statements and open-ended questions. Student demographic breakdowns are shown in Table 1.

Table 1: Student demographics within the cohort:

Demographic		No. of students in the course	% of cohort	No. of respondents	% respondents within each demographic
Number of respondents		77	100%	58	75%
Gender	Male	43	56%	31	72%
	Female	34	44%	27	79%
Student type	Local student	65	84%	47	72%
	International student	12	16%	11	92%
Age	17-18	10	13%	5	50%
	19-24	54	70%	43	80%
	25-34	10	13%	8	80%
	35+	3	4%	2	67%

Note: The survey yielded a response rate of 75%

In the questionnaire, students were asked which type of summative feedback they believed was most beneficial to their studies during the semester. The majority of students - 66% - indicated they felt the video feedback was most beneficial, while 22% stated written feedback, and 12% stated audio feedback. Table 2 outlines all student responses, broken down by gender, student type and student age.

The video feedback was the most popular format amongst male students (71%) and female students (59%), as well as local students (68%) and international students (55%). Notably, written feedback was more popular amongst females (34%) than males (13%); and audio feedback was more popular amongst international students (36%) than local students (6%). There was also an increase in popularity of the written feedback amongst older students within the cohort, with 50% of students aged over 25 preferring it to audio and video. Students who nominated the video feedback as the most beneficial did so for a variety of reasons, including the visual and aural aspects, as well as the clarity of the feedback:

Table 2: Student responses regarding which type of feedback was viewed as most beneficial, broken down by gender, student type and student age

Feedback type	Male participants		Female participants		Total participants	
	No. of respondents	% of respondents	No. of respondents	% of respondents	No. of respondents	% of respondents
Audio	5	16%	2	7%	7	12%
Video	22	71%	16	59%	38	66%
Written	4	13%	9	34%	13	22%
Total	31	100%	27	100%	58	100%
Feedback type	Local participants		International participants		Total participants	
	No. of respondents	% of respondents	No. of respondents	% of respondents	No. of respondents	% of respondents
Audio	3	6%	4	36%	7	12%
Video	32	68%	6	55%	38	66%
Written	12	26%	1	9%	13	22%
Total	47	100%	11	100%	58	100%

Feedback type	17-18		19-24		25-34		35+		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Audio	0	0%	6	14%	1	12%	0	0%	7	12%
Video	3	60%	31	72%	4	50%	0	0%	38	66%
Written	2	40%	6	14%	3	38%	2	100%	13	22%
Total	5	100%	43	100%	8	100%	2	100%	58	100%

> The video allowed me to see what the feedback was on my work, as well as the areas I needed to improve upon. (Male, local, 17-18)

> I thought the video feedback was excellent. Being told what you did wrong, what you could improve on and what you did right is good but actually seeing it with an explanation helps you take it on board. (Male, local, 19-24)

> This incorporated both audio and visuals into the feedback and so made it really obvious what the teacher was commenting on – it was very easy to follow. (Male, local, 19-24)

From the 22% of students who preferred the written feedback, students noted the assessment criteria rubric, the document layout, and the familiarity of written comments as positive aspects:

> I liked the fact that reasons were stated. This was easy to be able for me to go back and read and reflect on these things in the future. (Female, local, 17-18)

> I was able to see the breakdown of each component that was graded on, see which areas I need to improve on. (Female, local, 25-34)

> The written feedback has a good layout and is easier to follow. (Female, local, 19-24)

The smaller cohort of respondents who preferred the audio feedback noted the direct quality of the narration, and the clarity of language used as positives:

> The audio feedback got right to the point and made it clear what was done well and what required more consideration. (Female, local, 19-24)

> I could clearly understand what the teacher thought of my work, rather than the written notes which were harder to understand. (Male, international, 19-24)

During the survey, students were also given the opportunity to discuss the accessibility of the different feedback techniques, as well as their comprehension of the provided feedback, and the insight it gave into their academic performance. The majority of students found all feedback formats easy to access, with the audio and written options garnering a slightly stronger response than video feedback. Some students did note that it took slightly longer to download the video feedback file, which had an average file size of around four megabytes, compared to one megabyte for the audio file, and less than 50 kilobytes for the written feedback. Students were pleased with their ability to access all feedback types, with both the video and audio options accessible on smart phones and tablets, due to the format types used (.mp4 for video, and .mp3 for audio). The majority of students found all of the feedback files were easy to understand, with no clear superior format in this category. Again, the majority of students indicated that each feedback type provided insight into their academic performance, with the video feedback gaining a stronger response, 93%, when compared to audio, 88%, and written,75%. Mean response and broad agreement statistics are shown in Table 3.

Table 3: Mean response and broad agreement data related to
Likert-scale statements in the questionnaire

Topic	Audio feedback		Video feedback		Written feedback	
	Mean response	Broad agreement	Mean response	Broad agreement	Mean response	Broad agreement
The feedback file was easy to access.	4.69	97%	4.49	88%	4.75	94%
The feedback file was easy to understand.	4.66	92%	4.63	90%	4.63	91%
The feedback file provided insight into my academic performance.	4.54	88%	4.75	93%	4.20	75%

The survey used a 5-point Likert scale from 1 (strongly disagree), to 3 (undecided), to 5 (strongly agree)

Advantages and disadvantages of each feedback model

During the post-semester survey, students were also given the opportunity to discuss any specific advantages and disadvantages of each feedback model in more detail. When discussing the audio feedback, students repeatedly suggested it provided a more personal feel as opposed to traditional written feedback:

> The audio feedback was helpful and direct. It was a good opportunity to speak directly to the student, especially in large classes it is easy to feel like you blend into the crowd. (Female, local, 19-24)

> Hearing tone and emphasis on words helps grasp the intent behind them, much more so than just reading. (Male, local, 19-24)

> Felt much more personalised than your average written feedback, it is easy to tell if you are putting effort into the feedback we receive in an audio recording. (Male, international, 19-24)

The principal disadvantage of the audio feedback appeared to be that it simply wasn't as powerful as the video feedback. While most students appreciated the ability to hear the assessor's comments, specifically their tone and emphasis, the lack of a visual component seemed to impact on the efficacy of the feedback:

> Audio feedback is OK, and it did make its point well. However, the method obviously lacks the visual impact of video and of written feedback. Nevertheless, it is good to have audio boosting the other media. (Female, local, 19-24)

> I personally dislike hearing feedback, prefer it to be visual. (Male, local, 19-24)

Several other students noted an inability to process the information provided in the audio feedback and a need to return to it for future reference:

> Was probably marginally slower to take on board information than written feedback and didn't quite have the dynamics of video feedback. (Female, local, 25-34)

> I didn't really see an advantage in audio feedback. The disadvantage would be that I felt I would need to note down the feedback myself to refer back to it. (Male, local, 19-24)

When discussing the video model, the principal advantage was the clarity of the feedback provided:

> I thought the video feedback was excellent. Being told what you did wrong, what you could improve on and what you did right is good, but actually seeing it with an explanation helps you take it on board. (Male, local, 17-18)

> I felt that it was very easy to pinpoint what you were commenting on. Once again, it felt personalised and you can't rush through video feedback. (Male, local, 19-24)

> It is more personal - it is almost like face to face feedback. (Female, international, 19-24)

The video feedback was also considered to be the most appropriate type of feedback for the project work in the course. Students recognised that they were working in a predominantly visual medium, and appreciated this format in their feedback as well:

> Video feedback is useful to point out areas of an assignment you're referring to. It's a good feedback method for film projects and digital media projects. (Male, local, 25-34)

File size and download times were seen as the only disadvantages of the video feedback:

> Larger file size would be the only disadvantage I can think of. (Female, international, 19-24)

> Probably slightly slower to download than the audio or written feedback. (Male, local, 19-24)

When discussing the written feedback, three specific advantages came to the fore. Firstly, many students indicated that it simply felt more like feedback:

> It feels official, and it is good to have something concrete at the end of the semester. (Female, local, 25-34)

> It's what I'm used to - it's more formal. (Male, local, 35+)

> It is the most frequently used by most teachers so just seems normal and expected. (Female, local, 19-24)

Secondly, the assessment criteria rubric allowed for greater interpretation of their performance:

> I was able to see where I could improve on future work, which areas I really did well in, and other areas that let me down. (Female, local, 25-34)

> The scales were good for specific assessment criteria. (Female, local, 19-24)

Finally, students appreciated the ability to return to the feedback at later times without needing access to an electronic device:

> A computer isn't always required to read written feedback and you can also take your pace reading rather than listening at a video or audio file's pace. (Male, local, 19-24)

The key disadvantage of the written feedback was the perceived lack of detail. Despite providing between 100 and 200 words of commentary, it simply didn't compare to the amount of detail in the audio and video models:

> Disadvantage is feedback is quite succinct and short and does not offer as much insight into how to potentially improve. (Male, local, 19-24)

> Disadvantages could include the ability to rush through marking and not going through things as thoroughly as you may have if you were providing audio/visual feedback. It may also be more difficult to describe parts of an assignment you are assessing. (Female, local, 19-24)

> I think I understand spoken explanations better than written ones – it provides more insight. (Male, international, 19-24)

Key advantages and disadvantages of each feedback model are outlined in Table 4.

Table 4: A summary of cost and time implications
and affordances and limitations of each feedback model

Feedback format	Cost	Time implications	Affordances	Limitations
Audio	Free via software packages such as *Audacity*.	Fast to record feedback. Distribution to students is slower than written and faster than video feedback.	Can be conceived as more personal than written feedback. Vocal tone and emphasis can improve understanding of feedback. Strong comprehension of feedback. More detailed than written feedback.	Comparatively large file size. Slower to distribute. Requires digital access to listen to feedback. No visual element involved.
Video	Free via software packages such as *CamStudio*. Up to $179 for a licence of *Camtasia Studio*.	Slow to record and render feedback. Slow to distribute to students.	Feedback is engaging. Feedback is dynamic. Can be conceived as more personal than written feedback. Vocal tone and emphasis can improve understanding of feedback. Greater insight into student performance. Strong comprehension of feedback. More detailed than written feedback.	Comparatively large file size. Greater staff workload to produce feedback files. Slower to distribute. Requires digital access to view to feedback.
Written	Free via a variety of word document production software packages.	Fast to write feedback and distribute to students.	A rubric can allow for faster interpretation of specific assessment criteria. Small file size. Fast to produce and distribute. Can be conceived as more formal. Can be printed out and read at any time.	Feedback is limited to text – no visual or aural element involved. Feedback is static. Can be conceived as less substantial / detailed.

Discussion

The post-semester questionnaire provided insight into the student experience and their attitudes towards the three summative assessment feedback models. When asked which feedback models they would like to be used in future courses, 91% of students responded positively towards video feedback, 62% towards written feedback, and 39% towards audio feedback. Each format featured significant advantages and disadvantages, and provided different learning experiences to the students as a result. Several students found this in itself to be a key positive outcome of the course, appreciating the variety of the feedback:

> All up it was good to have a variety of feedback methods. The audio and video feedback especially helped to view the marker as a person instead of an institution, and the written feedback provided something more official at the end. (Male, local, 19-24)

Considering this response, a range of feedback techniques, such as those presented in this paper, may allow for stronger insight into academic performance, rather than a single technique, be it video, audio or text based. Students may also respond more positively to each feedback type as it is different from the last; the novelty of experiencing something new may be more engaging and instructive, rather than receiving the same feedback format for each assignment. Beyond this, a mixed-media feedback model, incorporating visual, aural and written (specifically an assessment rubric) components could also enhance the student experience.

Of the three models presented in this paper, the video feedback was the most positively received, followed by the written feedback and lastly the audio feedback. While students appreciated the ability to hear their teacher's voice in the audio feedback, it was viewed as deficient when compared to the video model. In some cases, it also seemed that students didn't necessarily view the audio and video models as 'official' feedback, thus emphasising the need to clearly explain to students that feedback can come in a variety of different formats and mediums. It should be noted that at the time of completing the questionnaire, students had most recently received the written feedback model for their final assignment, which was worth 50% of their grade for the course, as opposed to 17.5% for the other two assignments, and that this may have influenced their responses.

At the conclusion of the course, students were asked to take part in a second online survey, a standard university-distributed course evaluation. This survey yielded a response rate of 56% and included topics relating to the quality of the delivered course. 98% of respondents indicated they had a clear idea of what was expected of them during the course, and 95% indicated they received feedback that was constructive and helpful. 100% of respondents indicated they were satisfied with the quality of the course, often referring to the variety of feedback as a key indicator. These factors indicated that the methods of delivery of feedback, along with its quality and frequency, can have a positive impact on students' experience within a course and their subsequent development as learners.

From a teacher's perspective, there were other significant advantages and disadvantages of the three feedback models, predominantly related to workload. Providing audio feedback initially proved to be the quickest and easiest model of the three, taking between 10 and 15 minutes per student. Recording the feedback was a straight forward process and became easier and faster with experience. *Audacity* exported the audio file in .mp3 format quickly and the resulting file was approximately one megabyte in size.

The video feedback files took much longer to produce and also took longer to distribute to students. The process of creating the video was more involved, including loading the student's work on screen, recording the feedback, editing the video if necessary, and then exporting the video in .mp4 format. On average, it took between 20 and 25 minutes to provide video feedback per student, close to twice as long as the audio feedback. The increased time frame was not only due to the more intricate recording process but also because the video feedback files ran much longer than the audio feedback files. It proved to be much faster to simply narrate a problem and resolution related to a submission rather than visually showing the student in a program such as *Photoshop*. The video files

also took significantly longer to upload to the course's learning management system and distribute to students due to their file size.

Providing written feedback took approximately 20 minutes per student; however, it should be noted that the assessment weighting on the associated assignment was almost three times as much as the two previous assignments and, as such, required more in-depth analysis of the student's work. In terms of actually producing the feedback file and distributing it to students, this process was as fast as the audio model; it took slightly longer to provide the written commentary than it did to narrate the audio commentary. However, there was no necessary 'recording' process and the smaller file size of the word document meant that it was faster to distribute the feedback files to students.

The varying time frames associated with delivering each feedback model has a clear impact on a teacher's ability to incorporate them into a curriculum. With a small class size it is much easier to experiment with different feedback techniques and spend more time with formats such as video. If the class size is large however, there may not be the opportunity to utilise such techniques, given the desire, as well as the expectation, to provide *timely* feedback.

This study has indicated that there is no 'one size fits all' feedback model when it comes to assessment in higher education. When adopting a feedback model it is important for educators to take into consideration several factors, including the field of study; assessment type (formative or summative); assessment format (visual, aural, written); the class size; the student type (age; local or international; visual / hearing impaired); and available staff and student resources (software; hardware; internet access). For the students participating in this study, video feedback was viewed as the most beneficial because it provided more in-depth analysis of their academic performance in assignments, which were largely visual-based. The feedback model matched the format of the assessment. For assignments or other assessment tasks which are text-based, text or audio feedback models may be much more appropriate. Video feedback was also appropriate in this instance because students had access to the internet, through a range of devices, and could collect their feedback files quickly and easily. This is not the case with many student cohorts in developing countries around the world where internet access or even access to a computer may be limited. That said, when time and resources allow for it, video feedback has proven to be a highly valued format by students working in visual-based fields of study.

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Dr Josh McCarthy is a lecturer in digital media with specific interests in animation, graphic design, photography and digital art. He teaches within the Bachelor of Media Arts program in the School of Communication, International Studies and Languages. Josh is also the director of Electricityscape, an Adelaide-based company delivering digital solutions to local and international clients.
Email: Josh.McCarthy@unisa.edu.au **Web:** http://people.unisa.edu.au/Josh.McCarthy