

Visual Audio Screencasts to Enrich Feedback and Learner Engagement

Stephen Harney, Department of Civil, Construction and Mineral Engineering, Faculty of Engineering, Athlone Institute of Technology.

Class Size

18 Students

Feedback Approaches

Feedback and Feedforward using Screencasting on a two-stage assessment.

Subject Area

Civil Engineering,
Physics Labs

Technologies

Screencasting software (Screencast-O-Matic) in conjunction with a document camera (Epson ELP-DC06 Document Camera Visualiser). Delivered via Dropbox.

Challenge & Aim

First year Civil Engineering students submit hand written laboratory reports weekly during the semester. A number of feedback methods have been employed in previous years, written, face to face meetings, and group feedback to engender learning and understanding by the learners. Pedagogically, it was felt that these methods, though useful, were still not as effective as desired.

The aim of this research was to test the effectiveness and practicality of using Visual Audio Screencasts (ViA's) to provide feedback on hand-written lab reports.

The research questions were guided by Robinson et al. (2015) and Sadler (1989).

1. Is ViA's feedback effective feedback?
2. What are the additional pedagogical gains if feedback is given in ViA's form?
3. How do the learners rate ViA's feedback as an aid to their learning and engagement with subject material?

Evidence from the Literature

“Feedback is central to the learning experience.” This statement is a fundamental building block to nurturing an environment of effective learning, ability to self-critique and developing the skills of lifelong learning. Feedback is key to building students’ confidence and provide encouragement. Ali (2016) notes that effective feedback is a two-way process and a continuous dialogue between lecturers and learners.

McCarthy (2015) states that high quality and timely feedback, are crucial features for enhancing effective student learning and in developing strong relationships between staff and students. Sadler (1989), and Gibbs et al. (2004) observed, even when learners are provided with valid and reliable feedback, improvement does not necessarily follow. This begs the question as to whether the recipient has the skills to integrate feedback positively into their learning. Sadler (1998) argues it cannot be assumed that when feedback is given students will know what to do with it. Learners may need training on how use feedback.

Video is a visual medium and has the potential to enhance learning in different ways to other technologies. ViA’s have the facility for demonstration, seeing as opposed to being told how to improve subsequent coursework submissions.

A further advantage is that, video files provide a permanent record, which can be stored online or downloaded and replayed at the learner’s convenience on multiple platforms, as opposed to handwritten feedback which can be lost, damaged or discarded (McCarthy 2015). ViA’s are easy to follow and can provide learners with more information on their work than written corrective feedback (Ali 2016).

An unintended benefit is that ViA’s can improve learner’s listening skills. Low-proficiency listeners require the extra visual framework and more written text and/or visual codes to accompany the oral comments created in ViA’s. For learners with learning challenges, such as dyslexia, and different learning styles (VARK), the auditory and visual combination of ViA’s offer significant benefits (Wakeman et al. 2011).

Learners can also access ViA’s in the location of their choosing. They can review the feedback as often as they wish. This facility to stop and rewind their lecturer is a significant advantage that ViA’s provide over face-to-face meetings. ViA’s allows students to access live comments without the emotional stress associated with having their lecturer present (Séror 2012).

Feedback Approach

An optional two-stage submission of assignments was made available to the learners. The intention was to enable the learner to improve the quality of their work. ViA's were provided for both stages of the submissions, which were graded. The mark in itself provided incentive for the learner to improve the grade of their second submission. Cooper (2000) has reported how such a system can improve a learner's performance, particularly the performance of the academically weaker cohort.

Initially a short ViA's was considered, but on reflection the opportunity to enhance the feedback was adopted. This involved, writing out the solution with simultaneous verbal explanation of the steps taken as the ViA's were being generated. The worked example was given to the learner with their laboratory copy.

The process involves reviewing the submission before creating ViA's. The purpose of this was threefold; to reduce the risk of having to re-record, to improve the audio flow, to ensure that the ViA's were coherent, legible and audible to the learner.

ScreenCast-O-Matic was used as the screencast platform. A document camera and USB microphone were utilized to interface with ScreenCast-O-Matic. For recording, a quiet room is required, where interruptions are minimized. ScreenCast-O-Matic allows rendering in the background while simultaneously recording another screencast. Rendering of the Mp4 is dependent on the computer specifications and can take significant time. The time required to generate screencasts is comparable to traditional forms of feedback (Robinson et al. 2015).

Issues arose as how to make the ViA's accessible to the learners. Ethics dictate that, it is essential the material is only accessed by the intended recipient. Distribution was initially attempted using AIT's student email account system. However even using lower quality, the Mp4 file size generated was greater than that allowed by the email server. An investigation into using the VLE platform Moodle was also discounted. Moodle would allow individual access to feedback but only if the material submitted for marking was softcopy. The distribution platform adopted was Dropbox. Dropbox allowed for the generation of individual folders which could then be shared through each learner's student email.

Outcomes

Student Response

"I have received written feedback before in bullet point format, which while exact in where I needed to improve it did not give the detail of how to improve. Since receiving video feedback it is like having a 1 to 1 session with your tutor, you get so much information which is clear and can be understood where mistakes are made... it is free flowing and can be re-watched a number of times"

Three survey instruments were employed; an open question "Opinion on Feedback for assignments", a sixteen question semi-Likert survey, and the group was then split into two focus groups to discuss "Effective forms of feedback in third level".

90% of the class identified themselves as visual or kinesthetic learners on the VARK scale. 45% indicated that they are aural learners. In this survey 30% do not learn by reading or writing. ViA's accommodate a greater range of learning styles.

Laptops were the preferred platform to view ViA's. Accessibility was a factor as broadband connectivity in rural Ireland is an issue, *"Hard to access with bad internet connection in your area"*.

The least preferred platform was the college computer/open access laboratories. The reason proffered in a forum response was that *"College computers don't all have sound cards"*.

Initial problems with distribution of the files did create problems and the learners felt easier access (50%) and improved IT support (38%) is required.

Over half the group accessed the files three or more times. ViA's were accessed; when reminded, in advance of next submission and as soon as the email of the uplink arrived.

Learner responses to ViA's in the main were positive.

"When a lab report was handed up for correction, feedback was given back as a video of the lecturer showing where I went wrong and how to correct it, especially with math's equations and problems."

ViA's "can be listened to and downloaded and viewed at any time no risk of losing feedback written on paper"

"When completing assignments the student can watch feedback from previous assignment"

"It shows us where we went wrong"

One interesting finding was that no learner opted for verbal only feedback.

"Current platform doesn't notify student when new feedback is uploaded. This could be improved". A change in practice is required, by sending an email that new ViA's have been added to their shared folder.

Recommendations

With a small class size ViA's are achievable. When class sizes are greater than thirty it might be appropriate to be selective on the chosen method of feedback. This might mean that each learner could expect three ViA's per semester, with the more traditional forms of feedback, or even collective feedback used for the remaining material.

A key consideration is the target group that would most benefit from ViA's. This study was focused on a first year group, with the aspiration that, when the learners developed their report writing skills the assessment workload would reduce. Comparison of the average grades over the past number of years in the first semester of this subject confirms that the learner's grade has improved. This is the desired outcome, but a longitudinal study is required as the dynamics of this particular group could have produced the same outcome even if ViA's were not used.

Useful Links/Further Information

- <http://y1feedback.ie/synthesisoftheliterature/>
- <http://er.educause.edu/articles/2012/11/screencasting-to-engage-learning>
- http://lfuturesnews.co.uk/wp-content/uploads/2015/10/Oldham_Screencasting_Rationale.pdf
- <https://screencast-o-matic.com/home>

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Contact



Contact If interested in finding out more about this approach or technology, Please contact Stephen Harney P. Geo. M.ASCE at sharney@ait.ie

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