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Cultivating a viral community of practice to drive institutional enhancement through the promotion of video-enhanced learning, feedback and assessment

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Abstract

Building on both the earlier VERiFy project (Video-Enhanced Response in Feedback Loops) and the award-winning VELOCITY strategy (Video-Enhanced Learning Opportunities in Computing and Information Technology), the ReVERiFy project has seen the cultivation of a community of practice on video-enhanced assessment and feedback at the University of Huddersfield. Around the institution, learners studying across diverse disciplines and working in online- and blended-learning contexts now receive video-feedback on their work through a range of mobile, portable and desktop devices; case studies have been developed in a range of subject areas including Art and Design, Psychology, Education, Computing, Modern Languages, Marketing, and Applied Sciences. This paper offers an overview of three of those case studies, highlighting examples of best practice from divergent subject areas, and reporting on both learner evaluations and tutor experience of video-enhancement of the assessment and feedback process.

Introduction

The *ReVERiFy* project built on the work of previous University of Huddersfield (UoH) Teaching and Learning Innovation projects, integrating two streams of activity to deliver an innovative, technology-enhanced approach to the design of assessment and feedback with the intention of effecting sustainable change at an institutional level. A technology-based stream brought transformation to the assessment and feedback process through the use of video technologies and mobile devices, while a pedagogical stream saw the development of a vehicle to deliver these changes.

Background and Context

A pilot project in the School of Computing and Engineering found learners reporting high levels of satisfaction and engagement with video-enhanced feedback on formatively assessed work. Recognising that there is no one-size-fits-all approach to the integration of video within the assessment and feedback process, the *VERiFy* project formed part of the *VELOCITY* strategy, in which a range of techniques in video-enhancement have been identified which can be mapped to different assessment and feedback models across a range of disciplines.

In line with key assessment and feedback principles emerging through the REAP project and others, the institutional Assessment and Feedback Strategy (AFS) at UoH calls for learners to receive timely and personalised feedback which is clear and accessible, and which enables them to learn and to seek further clarification. *VERiFy* addressed these requirements with a *video feedback loop* system (see Figure 1, below), whereby learners participate in a continuous and iterative system of formative feedback through a medium with which they are both comfortable and familiar. Encouraging the development of a conversation between learner and tutor, the system allows learners to utilise tutor responses to their work effectively by rectifying errors as they develop, thereby preventing any escalation which might lead to problems in the development of their understanding.

The *video feedback loop* system enables learners to upload short video clips demonstrating their work and highlighting any problems encountered, and for tutors to respond to these issues and appraise them of their progress, thereby encouraging learners to engage in ongoing dialogue.

Consistent with the findings of the *Sounds Good* project, the adoption of a non-text-based approach also serves to reduce the impact of learning difficulties such as dyslexia on engagement with feedback and, as a corollary, the assessment process.

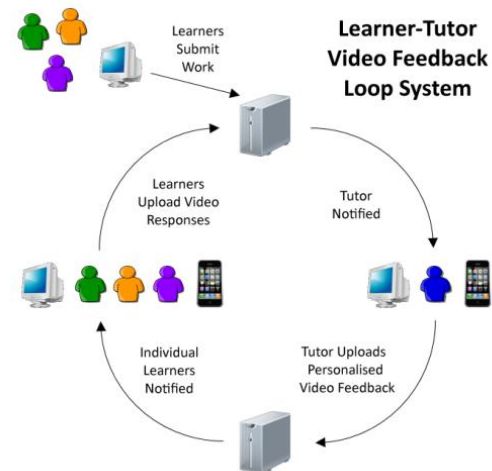


Figure 1: Video Feedback Loop System

A *VERiFy* case study exploring this approach in a predominantly visual subject area, computer games development, saw short screencast video clips of learners' work overlaid with a talking-head picture-in-picture of the tutor providing feedback. These video-feedback files were of an appropriate size for distribution and receipt by email or upload to the course e-portfolio system, with the process resulting in efficiency savings for tutors through a reduction in the time taken to produce the feedback, and learners reporting improvements in the quality and timeliness of the feedback received. While this approach saw a rich use of video, simpler uses are applicable in disciplines which require the use of text-based assessment in the form of essays and dissertations, where a simple screen capture of a document incorporating text-highlighting and a voiceover were found to be more appropriate; this technique is described in one of the case studies below.

Project Aims and Objectives

Against the background outlined above, *ReVERiFy* had a single clear aim of *effecting sustainable and efficient institution-wide change through the technological*

enhancement of assessment and feedback practices, with two streams of activity directed towards the realisation of this aim by achieving three key objectives:

- (i) The development of innovative effective examples of video-enhancement in assessment and feedback, and implementation of a conversational framework approach within the institutional AFS
- (ii) The expansion of engagement with mobile learning through the use of appropriate devices
- (iii) The formation of an institution-wide community of practice on assessment and feedback

The *ReVERiFy* project adhered to the institutional AFS, while also responding to learner calls for methods of assessment and feedback to be innovative, to inspire and motivate, to encourage dialogue, and to “enhance traditional teaching methods with new technologies” (National Student Forum Annual Report 2009, p.6). To this end, institutional enhancement is being effected through embedding video-enhanced assessment and feedback (VEAF) practices within each of the seven Schools at UoH, and the reach of video-based approaches extended across various disciplines.

The technology-based stream

The technology-based stream of activity drew on previous research which has explored opportunities to use audio-technologies to enhance feedback including work emerging through the *Sounds Good*, *ASEL* and *Duckling* projects. It also built on the *VERiFy* project’s exploration of the potential for video-feedback to engage learners in a conversational framework (Laurillard, 2002), while further integrating the use of mobile devices to achieve greater timeliness, and encouraging learner participation in a dialogic approach to feedback.

While institutions in the USA such as Duke University and the Abilene Christian University have demonstrated a commitment to equipping learners with mobile devices, the provision of mobile devices to all learners within the case study groups was beyond the scope of the project. Notwithstanding this, *ReVERiFy* has sought to prepare learners, academics and the institution for a potential surge in mobile learning by incorporating a mobile assessment and feedback pilot with 25 learners enrolled on modules from which early case studies were developed. This offered an opportunity to engage learners and academics in evaluations of applications for deployment to a range of mobile devices, and *ReVERiFy* also worked with UoH Computing and Library Services to identify and prioritise mobile access to key institutional systems which could be leveraged to bring benefits to VEAF practices.

The pedagogical vehicle

The pedagogical stream of activity saw the development of a mechanism through which to deliver this technology-enhancement of assessment and feedback at an

institutional level. Addressing academics' reluctance to embrace opportunities to employ technology-enhanced strategies by using a viral approach to grow an institution-wide community of practice (CoP) on assessment and feedback, this pedagogical vehicle saw the establishment of a system of academic School Champions acting as core members of the CoP. Charged initially with the development of case-studies highlighting examples of how VEAF practices could bring efficiencies for academic colleagues, Academic Champions are now playing a key role in helping to grow the community by mentoring small numbers of those colleagues to support them through the transition to a VEAF environment.

The development of a community of practice on video-enhanced assessment and feedback founded on a peer-driven, mentoring-based model has seen early-adopters supported in identifying opportunities to implement video-enhanced strategies based on the experience of other academics across the institution. Unlike top-down initiatives which can give rise to the academic reluctance described above, the vehicle for the delivery of institutional change in the area of technology-enhancement based on a viral approach can also act as the vehicle for the delivery of change in the pedagogy and culture of the institution.

Project Methodology

In keeping with the methodology employed in the pilot project, *ReVERiFy* employed a participatory action research methodology involving seven academic practitioners who agreed to act as Champions in each of the Schools comprising the University of Huddersfield: Applied Sciences; Art, Design and Architecture; Business; Computing and Engineering; Education and Professional Development; Human and Health Sciences; and Music, Humanities and Media. The project saw an early investigative and planning phase, combined with two iterative action research cycles; the first of these has seen the development of the initial case studies and identification of academic partners who will expand the CoP during the second phase.

An Academic Champion from each of the seven Schools was identified in preparation for the commencement of the project, and with an institution-wide team assembled, the first phase of case studies which were developed provided a broad spread of best-practice exemplars from across the disciplines. In order to embed VEAF practices as part of an institution-wide initiative to effecting sustainable change, the Project Lead worked with Academic Champions to identify modules where VEAF practices could most usefully be integrated.

The direct involvement of the Project Lead and the seven School Champions as academics with active teaching duties meant that the project yielded ten case-studies in the first year of operation alone, and it is anticipated that by mentoring academic colleagues through the second year using the viral approach, the number of case studies will continue to grow across the institution. It is expected that this number will be supplemented by colleagues choosing to adopt the use of video-

enhanced assessment and feedback unilaterally, as has already begun to happen, and it is intended that the realisation of a critical mass of evidence and support will further increase academics' willingness to embrace opportunities offered by technology to enhance assessment and feedback throughout the institution.

Case Study 1: School of Computing and Engineering

In the School of Computing and Engineering, the Project Lead has developed three case studies with members of a Foundation Year 1 cohort enrolled on a core work-based learning (WBL) module, one of which employs the three core elements of the *VELOCITY* strategy. The Foundation degree course combines two streams of learners, offering a design-based route to the qualification, and a programming-based route; one of the aims of the WBL module is to introduce both design and programming concepts to both streams of learners, with the first semester dedicated to the development of skills in the design and construction of 3D game environments, while in the second semester the work emphasises the development of skills in basic games programming, with learners creating 2D games using a Windows-based programming environment.

In both semesters, learning is scaffolded through the provision of a series of bespoke instructional tutorial videos embedded within the course e-portfolio system, *Mahara*. Learners are encouraged to develop their own game ideas alongside studio-based tutorial work, which is itself designed to assist progression beyond those threshold concepts (Meyer & Land, 2005), such as terrain (3D) or collision logic (2D), where learners often encounter conceptual and skills-gap problems.

The third strand of the *VELOCITY* strategy emerged through the work conducted as part of the ALPS-supported *Vineyard* project, which saw the production of learner-generated content in the form of summative, reflective, self-assessment videos documenting the development of their practical work over the course of an academic year. In an adaptation of this technique, learners are required to produce regular, short screen-captured videos documenting their progress on a weekly basis. These videos, captured using the functionality offered by the *screencast-o-matic.com* website, are uploaded to the learner's personal space in *Mahara*, and as video-diary entries these both constitute an element of the work which is considered at the summative assessment point, and form part of the conversation around feedback which takes place between learner and academic using asynchronous video.

Following the second strand of the *VELOCITY* strategy, and in an implementation of the video-feedback loop developed through the work of the *VERiFy* project, short, formative video-feedback or feed-forward is developed in response to learners' video diary entries each week, and this is made available to learners in a private feedback area within *Mahara*. Previous experience has shown that forming a close relationship between learning materials, video diary entries and video-feedback leads to

strengthened learner engagement with that feedback (McDowell, 2011), and learner evaluations have produced further confirmation of strong satisfaction with VEAF:

“Very easy to use and effective, it’s better having audio and visual aspects at the same time to explain something.” (Learner, on video tutorials)

“When making things that a player has to interact with like games and software, it’s a lot better to have video feedback to show the exact points in which there needs to be an improvement.” (Learner, on video feedback)

“It makes sense to document the work in this way, showing gradual changes in video to document the work helps point out problems that would otherwise be difficult to describe.” (Learner, on video documentation)

As a subject area, computer games development attracts a substantially higher than average proportion of learners assessed as affected by dyslexia and/or diagnosed with Asperger’s Syndrome (AS), and the benefit to learners in these groups of using VEAF techniques has been substantial. Indeed, a growing body of evidence is emerging which suggests both that (i) AS-diagnosed learners are afforded opportunities to participate in the dialogic process around feedback, and (ii) dyslexia-affected learners are better enabled to engage with video-feedback than audio- or text-based equivalents. A dyslexia-affected learner said of this approach:

“video is now my preferred [feedback] method due to my dyslexia I find it hard to retain text information, I find it much easier to associate work with visual stimulant and audio always helps this process.”

Case Study 2: School of Art, Design and Architecture

In the School of Art, Design and Architecture, the Academic Champion is using VEAF techniques with learners on the BA (Hons) Fashion Design with Marketing and Production, in a textiles production module in which there is an emphasis on gaining practical, hands-on experience of the processes underpinning the development of a garment, from the creation of initial designs through to the production of a finished product. Based in a studio environment where the pedagogical emphasis is on situated learning (Lave & Wenger, 1991) and learning by doing (Schön, 2000), learners are required to design and produce a jacket from mixed fabrics.

The academic used a Flip camera to record summative feedback on assignment submissions, commenting verbally on a range of positive and less-positive aspects of the work while focusing in on the specific areas of the jacket as she inspected the quality of the finished product. The Flip camera exports high-definition, large resolution video files in an uncompressed MP4 format, and distribution of the feedback was identified as an issue by the academic, who initially had to resort to asking learners to view their feedback either in the studio environment or in her

office. Prior to receiving the feedback, learners were initially hesitant and self-conscious regarding the use of video to highlight their work and pinpoint any errors, but came to embrace the technique once the video was made available to them and its value became apparent.

In her evaluation of the technique, the academic reported that “*video feedback is useful for students in both formative and summative situations ... it helps avoid silly questions and misunderstandings ...*”, and that it was “*... and a great way for the external examiner to see exactly the kind of feedback we’re giving*”.

While distribution of the feedback was a problem due to the file sizes involved, a solution to this problem has since been identified which will see an iPad or iPod used to record the video feedback, with this then compressed and distributed to learners by email using a version of the iOS app developed as part of the *VERiFy* project.

Case Study 3: School of Applied Sciences

In the School of Applied Sciences, the Academic Champion has used VEAF techniques with a group of 40 Foundation degree Year 0 learners taking a module on Statistical Analysis. In an assignment which aims to develop the skills required to produce an academic paper in the style of a journal article, learners are presented with a unique data set, and provided with a set of specific requirements which might be expected for an academic paper submission to be accepted in a scientific journal, such as the use of keywords, the inclusion of an appropriate abstract, correct and consistent referencing, and a discussion and conclusion which are based on sound reasoning and argument.

The academic had previously employed the opportunity to record and embed audio-feedback offered by the *GradeMark* system, so was already accustomed to creating and using *drag ‘n’ drop* objects to highlight strong and less-strong points in word-processed documents. Using Adobe’s *Captivate* software, an audio-enabled screen-capture process allowed the academic to provide personalised feedback on key points of the assignment submissions; this highlighted where the learner had met or failed to meet the learning outcomes, pinpointed aspects of the work which addressed specific assessment criteria, and demonstrated where refinements and revisions such as paraphrasing could be made by invoking the *TurnItIn* functionality to identify where sentences and paragraphs were found to closely resemble previously published work.

Learners reported strong levels of satisfaction at receiving feedback on their work in video form, and were especially happy with the highly personalised nature of the comments made, with a substantial number indicating that they had used the feedback to make improvements to their paper. The learner evaluation was predominantly positive, however critical feedback on the process highlighted issues regarding the volume of the speaker and his accent, and some learners expressed

misgivings regarding their perceptions of negativity towards their work on the part of the marker, although it was also recognised that these perceptions were subjective, and related to the tone of voice heard in the video. This latter point was acknowledged by the academic as a potential pitfall in both audio- and video-feedback, contextualising the issue as deriving from a requirement to provide feedback on over 140 assignment submissions against a relatively narrow set of assessment criteria within a short timeframe. Notwithstanding this, the academic found video-feedback to offer significant benefits to learners, suggesting that “... *students needed something to ‘hang’ the audio on to take it on board ... video seems the better way of accommodating this*”.

Having previously been able to embed audio-feedback directly into an area of the VLE privately accessed by learners, the academic reported difficulties in doing this with the files exported from the *Captivate* software. It was recognised however that achieving this would require the integration of screen-capture functionality within *GradeMark* and was therefore outside the scope of the existing system, and the academic found an alternative, manual technique to complete this task. Working with the Project Lead and the School’s learning technology advisor, a technical solution to the issue was identified which allows academics to record and save video-feedback files for a group of learners using an appropriate file-naming convention, and for these files to be transferred to the learner’s space on the VLE upon completion of the batch via an automated process.

Conclusion

The *ReVERiFy* project is currently half way through its two year lifecycle. During this time a broad range of case studies have been developed, and these case studies are already being used to encourage early adopters to identify opportunities to implement VEAF techniques within their own modules, thereby expanding the community of practice. A series of lunchtime staff development workshops to be held in each of the Schools during the 2012-13 academic session will see both Academic Champions and peripheral members of the CoP working closely with the School learning technology advisor to generate further interest in VEAF and promotion of its uptake by later adopters.

While some academics were initially sceptical regarding the investment of time required to master these techniques, many are now reporting the time-savings which have been realised in terms of reductions in the time taken to produce word processed feedback, while managers have been quick to note the efficiencies achieved in terms of internal moderation and external examination of work and the benefits offered by the production of a trail of evidence. Most importantly however, improvements in learner engagement with the assessment and feedback process have been recognised by both academics and the learners themselves, and learner evaluations of the project indicate a tangible increase in levels of satisfaction with assessment and feedback.

Bio:

James McDowell is a Senior Lecturer and University Teaching Fellow based in the School of Computing and Engineering at the University of Huddersfield. He teaches on the Computer Games suite of undergraduate courses in the Department of Informatics, where his current research interests focus on video-enhanced learning, assessment and feedback, and the uses of mobile technologies in higher education. James can be contacted at: james.mcdowell@hud.ac.uk.

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