

Podcasting: a tool for enhancing assessment feedback?

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Abstract

Assessment is central to student learning and it is widely recognised that the potential to learn from assessment experiences is shaped greatly by the content of tutor feedback and student engagement with it. Technological innovations are providing new opportunities to alter the nature and delivery of assessment feedback, perhaps offering the potential to provide enhanced feedback, without necessarily increasing tutor workloads. This paper will summarise the details of a project completed within the Department of Geography and Development Studies at the University of Chester during the 2006-2007 academic year. The main purpose of the project was to explore how podcasts might be used to provide assessment feedback for students. The project focused on two different modules with dissimilar content and assessment exercises, although both having in common an e-learning component in the pre-existing teaching and learning strategy. One of the case study modules is at Level 1 with a student group of 24; the other a final year module with a class size of 26. The paper will report on both staff and student perceptions of podcast-based feedback, the latter collected through pre- and post-experience questionnaires and a focus group led by an independent facilitator. Whilst the subject-specific content of the case study modules is geography the lessons learned have wider applicability. The findings from this project point to a number of interesting technical and pedagogical issues.

Introduction

This paper provides an evaluation of the use of podcasts for assessment feedback, an innovation adopted for two modules within the Department of Geography and Development Studies at the University of Chester. Initially, the paper sets a brief context by outlining key issues related to technology-enhanced learning and assessment feedback. Secondly, the two case study modules and their assessment strategies are described, followed by a review of the research methods that were adopted to collect the views of participating students. The majority of the paper then discusses key findings, including the impact using digital audio commentaries seems to have on the nature and content of feedback and student engagement with it.

Technology Enhanced Learning and Mobile Devices

New technologies and software have the potential to change and refine key aspects of the Higher Education learning experience including the mode of delivery (Ginns & Ellis, 2007), the availability of resources (Lippincott, 2005), student-tutor and student-student interaction (Ellis, Goodyear, Prosser & O'Hara, 2006), recording and monitoring progression (Strivens, 2007) and assessment exercises (JISC, 2007). HEFCE's e-learning strategy (2005) notes important synergies between new learning technologies and other structural trends: a more diverse student body; increasing flexibility of provision; work-based and home-based learning; and individualised support for planning and recording achievements. In the same document they also remind educators of the importance of focusing "on student learning rather than on developments in technology per se, enabling students to learn through and be supported by technology" (p. 6).

Within this context, the development of powerful mobile technological devices is facilitating a wide range of new opportunities (Naismith, Lonsdale, Vavoula & Sharples, 2004). In their good practice guide to embedding mobile and wireless technologies, JISC (2005) discuss case studies involving laptops, tablet PCs, mobile phones, Personal Digital Assistants (PDAs), USB storage devices and electronic voting systems. The use of wireless, handheld devices seems to be generating particular enthusiasm with flexibility, immediacy, efficiency, personalisation and collaboration cited as potential pedagogic benefits (Motiwalla, 2007). The use of mobile devices for recording, storing and sharing field-based information is of inevitable interest to this paper's authors because of their geographical/environmental science background. This potential extends to other public sites of educational interest such as museums and galleries (Scanlon, Jones & Waycott, 2005).

One device which is increasingly commonplace is the portable MP3 or MP4 player, either as a discrete item (such as the Apple iPod) or embedded into other technology (most typically mobile phones). They play digital media files (MP3 – audio only, MP4 – audio and video), usually downloaded from the internet via a computer. Whilst their primary purpose is entertainment, the educational opportunities they provide are acknowledged across a wide range of academic disciplines (Boulos, Maramba & Wheeler, 2006; Brittain, Glowacki, Van Ittersum & Johnson, 2006; Chan & Lee, 2005; Georgia College & State University, 2005). Examples cited in the literature include recordings of lectures or lecture summaries, the provision of supplementary learning and support materials (both pre- and post-class), instructions for equipment use and fieldwork guides. Whilst

these podcasts are frequently tutor-generated, the potential for student-authored materials is increasingly recognised (Chan, Lee & McLoughlin, 2006). Through their involvement in the Informal Mobile Podcasting and Learning Adaptation (IMPALA) project, Edirisingha and Salmon (2007) identify seven contexts in which podcasting can be usefully utilised:

1. To support online learning and to integrate other e-learning activities – the profcast model
2. As extensions to lectures: summaries, additional learning resources, further reading and research
3. As a strategy for teaching large student cohorts requiring support for practical-based learning
4. To enhance student learning in location-based studies
5. To bring topical issues and informal content into the formal curriculum
6. To develop reflective and active learning skills
7. To develop students' study skills during the first year at university

It is noteworthy, however, that across the emerging literature on podcasting there is little discussion about how it might be utilised to provide assessment feedback to students.

Assessment and Feedback

Assessment is central to the student experience of Higher Education and the assessment strategies adopted by tutors are certain to have a major impact on student learning (Brown, 1999). The wealth of guidance literature emphasises the importance of assessment exercises which are designed to be fit-for-purpose, are closely aligned with course outcomes and content, have transparent assessment criteria, are fair and achievable in the time available, promote deep learning and are inclusive (Biggs, 2003; Brown, 2005; Brown, Bull and Pendlebury, 1997; Brown and Glasner, 1999).

It is widely recognised that the potential to learn from assessment is shaped greatly by the content and timeliness of tutor feedback and subsequent student engagement with it. Race (1999) believes that “feedback quantity and quality are probably the most important factors in enhancing students' learning” (p. 27); Gibbs and Simpson (2005) provide a useful list of ten ‘conditions under which assessment supports learning’ – seven of which refer directly to feedback content and its use and interpretation by students. The value of understandable, formative feedback which is developmental and feeds forward is frequently stressed as opposed to more judgmental, summative comments provided solely to justify the mark awarded (Glover and Brown, 2006; Brown, Glover & Stevens, 2006). However, student perceptions of feedback and its utility remain relatively under-researched topics (Mutch, 2003). This paper aims to make a contribution to this evolving research literature, by focusing on an innovative approach to providing assessment feedback.

Details of the Case Study and Methods of Evaluation

Podcast assessment feedback was employed in two modules during the 2006-2007 academic year. In semester 1, ‘Climate Change and Natural Hazard Management’ was used to pilot this initiative. Twenty-six students had enrolled for this optional Level 3 module. Audio feedback was provided on three assignments: an e-postcard (a single PowerPoint slide designed to ‘persuade’ a world leader to change policy on a key aspect of climate change), a group oral presentation and a fieldwork report. The focus then switched in semester 2 to the Level 1 module ‘Introductory Field Skills in Geography’, for which 24 students were registered. In this case, audio feedback was provided for two assignments: a mid-module short question and answer test and a fieldwork report presented as a web site (for more details about this method of assessment see France and Ribchester, 2004). For each assignment, overview feedback was recorded, summarising the group’s performance as a whole and reflecting on the general strengths and weaknesses of the students’ work. This was then combined with specific feedback for each student (or student group in the case of the oral presentation) based on the quality of their work. Therefore, within one podcast each student (or group) would have the opportunity to contextualise their own performance within that of the module cohort as a whole. Additionally, brief written feedback was provided for two of the assignments – the fieldwork report (Level 3) and web site (Level 1).

It is beyond the purpose of this particular paper to provide a detailed discussion of the process of recording and editing the podcasts (and useful guidance on these issues can be found at the IMPALA (2007) website). However, in summary, the commentaries were recorded using widely available technology: a 30GB Apple iPod with a microphone attachment (www.apple.com/uk/ipod/ipod.html). These were then downloaded to

an Apple Mac. The GarageBand editing software tool (www.apple.com/uk/support/garageband/) was used to create each podcast by combining the generic and bespoke feedback for each student for each assignment. These podcasts were then transferred into the iTunes software (www.apple.com/uk/itunes/) to compress the file size and ensure compatibility with the MP3 format. Finally, the podcasts were sent to the feedback section of each student's electronic Progress File (personal development planner) which is embedded into the University of Chester's intranet system. This system, IBIS, has been designed 'in-house' and has many similar characteristics to the widely-used commercial systems such as Blackboard. An automatic email was sent to students each time a new podcast became available for them to download.

The impact of this initiative was evaluated in three ways, following a common method for both modules. Firstly, all students were given the opportunity within an early teaching session to complete a short questionnaire. This focused mainly on their understanding of podcasting generally, views and experiences of existing methods of feedback, and any expectations they had about feedback via podcasts. The response rate for this initial survey was high: all the enrolled students for the Level 3 module; all but three (88%) at Level 1. Once the modules were completed, a further questionnaire was distributed, asking students to indicate their use of the podcasts and their perceptions of them. A good response of 69% was achieved for this survey at Level 3, but a much a lower reply rate of 29% was obtained at Level 1, reflecting the difficulties of contacting students once teaching had formally ended. So, in summary, this evaluation is based on a total of 72 questionnaire responses (47 pre-feedback and 25 post-feedback). Additionally, two focus group discussions were held a short time after the completion of both modules, facilitated by a tutor from a different HEI who was previously unknown to the students. Four students volunteered to participate in the Level 3 discussion; five first year students attended the other. Together, these extended focus groups provided a rich source of qualitative information about student engagement with the feedback and provided the opportunity to explore and clarify some of the themes emerging from the questionnaire surveys in more depth.

Results and Discussion

The discussion of the results is divided into three themes below. The Level 1 and Level 3 students shared a number of common perspectives and so the results from the two groups of students are often combined. Quotations are used to illustrate the points being made, with the respondents identified by level of study and evaluation method (i.e. PreQ – pre-feedback questionnaire, PostQ – post-feedback questionnaire, FG – focus group).

Accessing and Listening to the Feedback

Initial student concerns about this new approach to feedback, as recorded in the 'pre' questionnaire, focused predominantly on technical considerations. Despite the majority of students indicating 'confidence' in their use of computer-based technology, nearly half (47%) expressed some reservations about the possible accessibility and usability of the podcasts, e.g.

"Never used it before – not sure how to do it." (L3 – PreQ)

"I'm worried I may have a problem downloading it, as I haven't done it before." (L1 – PreQ)

"Doing the technical side of it. I get frustrated when computers don't work." (L1 – PreQ)

"Will it actually work?" (L1 – PreQ)

Although student understanding of podcasting was relatively high (82%), only a minority of students had personal experience of listening to or watching a podcast (33%). This lack of direct experience will have inevitably contributed to the uncertainty about accessing the feedback. At first, these concerns may have seemed well founded as there were a number of technical challenges (including optimising the volume level of the podcasts) which delayed the first phase of feedback during the Level 3 module. This led to some frustrations, compounded by the initial failure of the automated notification email system. However, ultimately these proved to be just 'teething' problems, perhaps inevitable when a number of innovations were being used simultaneously for the first time.

Importantly, there is strong evidence to indicate that the majority of students listened to their podcasted feedback. The accessibility of the podcasts was a recurring theme in the post-feedback questionnaire responses and the focus group discussions, partly in comparison to the availability of hard copy feedback which needs to be collected from the department. Only one respondent indicated that they had not listened to any podcasts. Even though the small return for the Level 1 'post' survey creates some uncertainty about the

'take-up' of the feedback for the web site assignment, informal discussions with the students indicated a high 'listening rate' for the mid-module test feedback, and there is every reason to assume that this pattern was repeated for the final assignment.

Contrary to the tutors' initial expectations, very few students actually saved their feedback to an MP3 player, despite personal ownership of these devices being very high (all but eight of the students surveyed). Instead the great majority (84% of the post-feedback questionnaire respondents) listened to their feedback directly from a desktop computer or laptop, using freely available software such as RealPlayer, iTunes, QuickTime or Windows Media Player. The students commented that the permanent storage of the podcast within the on-line Progress File significantly reduced the need to download (as well as making it impossible to mislay the feedback). Interestingly, six students indicated their reluctance to download because they preferred to use their MP3 player for listening to music only. This seems a helpful reminder of the need to 'tread carefully' when exploring the use of technology which has a "high level of social cachet" (Chan et al, 2006, p. 111). Naismith et al. (2004) observe that students "may abandon their use of certain technologies if they perceive their social networks to be under attack" (p. 33). Knight (2006), reflecting on his survey of student attitudes to technology, offers a similar note of caution suggesting that downloading of information to mobile devices "may be interpreted as an unwanted intrusion into the personal and social (external) life of the individual, and an infringement of norms of behaviour between 'teacher' and 'learner' (p. 21).

Nature and Content of the Feedback

A key part of the rationale for engaging with digital audio feedback was the anticipated potential to provide more comprehensive commentaries on student work compared to traditional hard copy feedback methods. In simple terms, we can speak more quickly than we can write or type and therefore should be able to provide more detailed feedback within the same time frame. Considering the potential significance of feedback to student learning this proved to be a strong motivation to pursue this innovation.

Encouragingly, these tutor expectations seem to be borne out in the evaluative comments from the students. Sixty-eight per cent of the post-feedback questionnaire respondents refer, in some way, to the greater depth and detail in feedback compared to their previous experiences. The comments below are typical:

"there is more quantity of feedback and ... it is probably more specific and carefully thought through." (L3 – PostQ)

"More constructive, can be targeted to specific points for improvement and gives you a more accurate account of the quality of work and why marks were awarded." (L3 – PostQ)

"Seems to be more feedback on the podcast than you have on written feedback." (L3 – PostQ)

"You tend to get a lot more feedback than you would with more traditional methods." (L1 – PostQ)

The feedback is also deemed to be more personalised, e.g.

"More detailed and personal feedback. Clear idea of positive and negative points about the work." (L3 – PostQ)

"This feedback felt that the work had really been looked at and evaluated personally." (L3 – FG)

"It is done on quite a personal level and in a good amount of detail for you personally." (L1 – PostQ)

"A lot more personal information. Felt like I was getting a 'one-to-one'". (L1 – FG)

Although, to an extent, 'more personal' and 'more detailed' seem to be expressions that are used interchangeably by the students, there is a sense in which being 'spoken to' is deemed to be a more direct engagement with the student (see the next section for further discussion of this idea). Furthermore, the sensitive microphones do tend to pick up the sound of pages being turned or mouse buttons being clicked as the feedback commentary is being constructed and spoken. This provides a very tangible sense of a student's individual piece of work being reviewed and may add to the perception of more personalised feedback. It was "like a personal tutorial" according to one student (L1 – FG).

Some concern was expressed about feedback commentaries lasting too long. Providing too much feedback is, of course, a very unusual critique to be offered by students, but it deserves some consideration here. Across the five different assignments, the generic feedback podcasts varied in length from two to seven minutes. The individual podcasts ranged from two to eight minutes. The longest combined podcast (generic and specific feedback) for an individual student was 14 minutes. Generally, the podcasts for the Semester 2 module were

longer, as tutor confidence and comfort in providing audio feedback increased. Comments about the length of the feedback were almost entirely from the Level 1 students, which could indicate that the longer commentaries that they received had gone beyond some ‘natural threshold’ after which attention begins to diminish. Chan et al (2006) speculate that the limit for podcasts is three to five minutes, roughly the length of a typical song. However, the students’ comments may equally reflect the relative lack of experience and relatively lower levels of engagement of students in their first year of study. By contrast, the Level 3 focus group discussions suggested that the length of podcasts should be dictated by the ‘what needs to be said’ and not some pre-determined time limit. Different perspectives also emerged about the value of the generic commentaries provided with each podcast. Whilst the Level 3 students generally were positive about the opportunity to contextualise their own performance, the Level 1 students were more inclined to question its value.

The student responses recognised how providing feedback in an electronic format via the University intranet system increased its accessibility, e.g.

“Easy to use and obtain feedback off campus – don’t have to make special journey to collect feedback.” (L3 – PostQ)

“Liked the access from home, even though I live near the University.” (L3 – FG)

“There is no time wasted coming down to collect the feedback and it can be easily accessed if you have to leave the Uni, i.e. to go home.” (L1 – FG)

The Level 1 students, who received their first podcast during the Easter vacation, also tended to recognise the potential of electronic feedback to reduce the turnaround time between assignment submission and receipt of feedback.

The ‘24/7’ availability of the podcasts appears to be valued by the students, but the accessibility of this form of assessment feedback seems to be widely recognised in another, perhaps more important, way. Unexpectedly, nearly half (49%) of the students completing the ‘pre’ survey commented on how their use of written feedback has been undermined at some point previously because of the difficulty in reading tutors’ handwritten comments. This is the most basic of barriers to effective feedback. By contrast, the audio commentaries are “better than trying to read bad handwriting”, as one student bluntly observed (L1 – PostQ). The challenge of reading (and deciphering) feedback is all the greater for students with specific learning difficulties, such as dyslexia. It does appear that podcasts offer real opportunities to both enhance the quality of feedback and increase its accessibility to students as a whole. However, appropriate adjustments will need to be made for students with hearing difficulties to ensure that they are not disadvantaged.

Engagement with the Feedback

The perception of more detailed and personalised feedback was evident across both the Level 1 and 3 student groups. The evaluations also suggest a greater sensitivity to the spoken word in comparison to written text. Students commented on this in both the ‘pre’ and ‘post’ evaluations, particularly in relation to what might be deemed more negative feedback, e.g.

“the impact of the words being spoken [will] be much harder hitting and may be a bit demoralising.” (L3 – PreQ)

“Any criticism will hit home more.” (L3 – PreQ)

“May be harder to hear a poor mark, rather than in writing.” (L3 – FG)

“[I am least looking forward to] hearing disappointment in their voices.” (L1 – PreQ)

In this respect, the need to construct sensitive commentaries that do not undermine student confidence seems particularly important. Furthermore, the tenor of the delivery was recognised to be an important factor in enhancing understanding of the feedback. As one student commented, you get “the tone of voice with the words so you could understand the importance of the different bits of feedback” (L3 – PostQ). Similarly, Welham (1999) and Kates (1998) both recognise the significance of how words are delivered in their reviews of the use of tape recordings for assessment feedback. Even the widest vocabulary cannot replicate the voice’s ability to “adjust intonation, inflexion, phrasing, pacing, volume, loudness and timbre...Print does not allow a learner to identify and interpret audible nuances that personalise content because print cannot stimulate the auditory senses” (Power, 1990, p. 45).

An appreciation of these subtleties may be affected to some degree by variations in preferred learning styles within the groups, but overall many students commented favourably on the comparison between audio and written feedback, e.g.

“Actually took in the feedback, sometimes skim-read written feedback.” (L3 – PostQ)

“Don’t just briefly read it, you actually listen to it and take it in.” (L3 – Post Q)

“I seem to remember the comments easier than just reading them.” (L3 – PostQ)

“Really like this idea, I find listening to things that much easier.” (L1 – PostQ)

Tutors frequently express the suspicion that students tend to focus on assignment marks and not the detail of the feedback, although not all research supports such a view (e.g. Carless, 2006). Comments from the pre-feedback surveys, however, do suggest some ‘unevenness’ in engagement with feedback:

“I don’t tend to read the whole lot and so don’t always pick up all the errors I may be making.” (L3 – PreQ)

“I don’t actually read them.” (L3 – PreQ)

“Tend to look mainly at the mark received.” (L3 – PreQ)

“Just look at mark and throw away.” (L3 – PreQ)

However, in this case, a deeper engagement with the feedback is also encouraged by the ‘concealed’ nature of the final mark and grade. It is not instantly viewable as it is on a feedback sheet, it is delivered somewhere within the audio commentary, albeit typically towards the end. It “makes you listen to all of the feedback not just the mark” (L3 – PostQ), although for some this was clearly a source of frustration and also anxiety, as the podcasts approached their denouement. One student admitted that they “ignored the feedback at first until I got to the mark, and then went back to the start” (L3 – FG).

Student engagement with feedback is certain to be affected by the context in which it is received. The evaluation work points to some interesting findings in this respect. The questionnaire responses indicate that the majority (72%) of students accessed and listened to their feedback off campus, on their own, and in their own study spaces. Such circumstances are likely to be conducive to careful listening and scrutiny of the feedback, if the student is motivated to do so. This is in significant contrast to the whirl of activity that can sometimes surround the return of assignments and feedback, for example the ‘dash’ to the departmental office after the end of the teaching session. The focus group discussions did explore the extent to which students shared or allowed others to listen to their feedback. Occasionally feedback was shared with friends, sometimes a little reluctantly, although not with their peers taking the same module.

Whilst the preceding commentary generally highlights some perceived benefits of podcasts, three issues have emerged which may impact negatively on student engagement with the feedback. Firstly, there is the possible problem caused by the physical separation of the assignment and feedback. Quite naturally, students will be inclined to listen to their feedback as soon as possible, even if they haven’t got immediate access to their assignment. Where applicable, students will need to make the effort to collect a hard copy of their submitted work or, probably more commonly, access their own digital copy, to ensure that the feedback is contextualised fully. The more detailed and specific the comments are, the greater the importance of listening to the feedback whilst reviewing the assignment. Secondly, there is the loss of annotations on written work. It is reasonable to argue that much feedback can be provided more efficiently through the spoken word, but when dealing with the fine detail of grammar, punctuation, spelling and referencing, for example, it is probably quicker to amend a hard copy than describe the necessary changes orally. There is also the possibility that the absence of written comments may, in some circumstances, make it less transparent which particular parts of an assignment are being discussed, although writing reference numbers on the work (to act as discussion points) would serve to counter this problem quite easily, and is advocated in Welham’s discussion of tape recorded feedback (1999). Thirdly, there was the lack of a summary feedback sheet, for three of the assignments being discussed in this case study. It is common practice in the Department to provide feedback sheets which include both tick-boxes (ranging from ‘first’ to ‘fail’) referenced against the assignment’s assessment criteria and qualitative comments. The loss of this feedback component was commented on during both of the focus groups and the extent to which it could still be retained was questioned, e.g.

“Podcasting was different, I liked it. It is different to the criteria sheet but I would not replace it. I would like both” (L3 – FG).

Conclusion

This initiative has been subject to careful evaluation during this academic year, a process which has highlighted how audio feedback has the potential to improve existing practice. At the same time, some limitations and drawbacks have been recognised. Audio feedback can be applied, in theory, to any assessment exercise, but may work particularly well for assignments for which detailed annotations on scripts are either not of high importance, not possible (e.g. oral presentations, role-plays, posters, some computer-based submissions), or for work which is not typically returned to students (e.g. exams). Podcasts do not have to be provided on their own; they may be combined and linked easily to written comments and summary feedback sheets, although this will obviously increase the marking workload. Tutors are in the best position to judge what is appropriate and may be valuable in their ‘local’ context, considering the purpose and design of individual assessment exercises and the overall pattern of assignments within specific modules and programmes as a whole. When deemed appropriate, podcasts offer the opportunity to diversify feedback strategies, potentially providing more detailed guidance and explanations which, in turn, may be reviewed more deeply by students.

Readers of this paper will inevitably be speculating on the time required to produce podcasts relative to traditional feedback methods. This is an important issue. It is the contention here that the process of marking and producing feedback needs not to be any longer than traditional methods, once an initial familiarity with the recording equipment and comfort in providing oral commentaries is achieved. But, as argued, within the same time frame there is the potential to provide more detail. It is beyond the limits of this paper to discuss the process of preparing and structuring oral feedback, and tutors will no doubt execute this in different ways, but detailed scripting to produce word-perfect commentaries is not advocated or realistic. However, the time taken to edit and distribute the podcasts must also be factored in, although this is not necessarily a complex task and one that could be executed by support staff, where these are available.

The study of the impact of podcasting (for feedback and other purposes) is still in its infancy. A particular area of interest that has emerged from this research is the relative sensitivity of students to audio commentaries and this is worthy of greater study. For example, over a longer period, do students retain and carry forward more feedback from the spoken word compared to the written? What are the optimum ways to deliver and structure feedback to ensure its effectiveness and is there an upper time limit beyond which impact begins to diminish? In the Chester-based example discussed here, to what extent does the embedding of feedback in the Progress File promote an engagement with PDP? More generally, longer term research will reveal the extent to which current positive perceptions may at least partly reflect the ‘novelty’ phase of this innovation.

To conclude, this paper has reported some encouraging findings which suggest that, used in the right circumstances, podcasting can enhance assessment feedback and, therefore, augment the student learning experience. However, it is important to finish with the reminder that podcasting, on its own, does not guarantee greater learning from assessment. The technology needs to be used to provide carefully constructed and sensitively delivered commentaries which are motivational and feed forward. More generally, the potential of podcasts can only be fully realised when used with well designed, fit-for-purpose, assessment exercises, and ideally in circumstances where there is further encouragement for students to engage proactively with their feedback, particularly whilst preparing future assignments.

References

- Biggs, J. (2003). *Teaching for Quality Learning at University*. Buckingham: SRHE & Open University Press.
- Brittain S., Glowacki, P., Van Ittersum, J. & Johnson, L. (2006). Podcasting lectures. *Educause Quarterly*, 29 (3), 24-31.
- Brown, S. (1999). Institutional strategies for assessment. In S. Brown & A. Glasner, (Eds.), *Assessment matters in Higher Education: Choosing and using diverse approaches* (pp. 3-13). Buckingham: SRHE & Open University Press.
- Brown, S. (2005). Assessment for learning. *Learning and Teaching in Higher Education*, 1, 81-89.
- Brown, G., Bull, J. & Pendlebury, M. (1997). *Assessing student learning in Higher Education*. London: Routledge.
- Brown, E., Glover, C. & Stevens, V. (2006, July). *Why don't we provide effective written feedback?* Workshop presented at the Higher Education Academy Annual Conference, University of Nottingham.
- Brown, S. & Glasner, A. (Eds.). (1999). *Assessment matters in Higher Education: Choosing and using diverse approaches*. Buckingham: SRHE & Open University Press.
- Boulos, M., Maramba, I. & Wheeler, S. (2006). Wikis, blogs and podcasts: a new generation of web-based tools for virtual collaborative clinical practice and education. *BMC Medical Education*, 6, 1-8. Retrieved June 27, 2007 from <http://www.biomedcentral.com/content/pdf/1472-6920-6-41.pdf>
- Carless, D. (2006). Differing perceptions in the feedback process. *Studies in Higher Education*, 31, 219-233.
- Chan, A. & Lee, M. (2005). An MP3 a day keeps the worries away: Exploring the use of podcasting to address preconceptions and alleviate pre-class anxiety amongst undergraduate information technology students. *Proceedings of the 2005 Student Experience Conference, Charles Sturt University*, 59-71. Retrieved June 27, 2007 from <http://www.csu.edu.au/division/studserv/sec/papers/chan.pdf>
- Chan, A., Lee, M. & McLoughlin, C. (2006). Everyone's listening with podcasting: A Charles Sturt University experience. *Proceedings of the 23rd Annual Ascilite Conference: Who's Learning? Who's Technology?*, University of Sydney, 111-120. Retrieved June 26, 2007 from http://www.ascilite.org.au/conferences/sydney06/proceeding/pdf_papers/p171.pdf
- Edirisingha, P. & Salmon, G. (2007). IMPALA podcast models: some examples. Retrieved June 25, 2007 from http://www2.le.ac.uk/projects/impala/documents/IMPALA_podcast_models
- Ellis, R., Goodyear, P., Prosser, M. & O'Hara, A. (2006). How and what university students learn through online and face-to-face discussion: conceptions, intentions and approaches. *Journal of Computer Assisted Learning*, 22, 244-256.
- France, D. & Ribchester, C. (2004). Producing websites for assessment: a case study from a Level 1 fieldwork module. *Journal of Geography in Higher Education*, 28, 49-62.
- Georgia College & State University. (2005). Apple + iPods @ GCSU: Fine tuning the BEST minds! Retrieved June 28, 2007 from <http://ipod.gcsu.edu/>
- Gibbs, G. & Simpson, C. (2005). Conditions under which assessment supports student learning. *Learning and Teaching in Higher Education*, 1, 3-31.
- Ginns, P. & Ellis, R. (2007). Quality in blended learning: Exploring the relationships between on-line and face-to-face teaching and learning. *The Internet and Higher Education*, 10, 53-64.
- Glover, C. & Brown, E. (2006). Written feedback for students: too much, too detailed or too incomprehensible to be effective? *Bioscience Education e-Journal*, 7. Retrieved June 28, 2007 from <http://www.bioscience.heacademy.ac.uk/journal/vol7/beej-7-3.htm>
- HEFCE. (2005). E-learning strategy. Retrieved June 26, 2007 from www.hefce.ac.uk/pubs/hefce/2005/05_12/
- IMPALA. (2007). Resources and tools for creating podcasts. Retrieved July 4, 2007 from <https://www2.le.ac.uk/projects/impala/documents/resources-and-tools-for-creating-podcasts>
- JISC. (2005). *Innovative practice with e-learning: A good practice guide to embedding mobile and wireless technologies into everyday practice*. Bristol: HEFCE.
- JISC. (2007). *Effective practice with e-assessment: An overview of technologies, policies and practice in further and higher education*. Bristol: HEFCE.

- Kates, R. (1998). Tape recorders and the commuter student: Bypassing the red pen. *Teaching English in the Two-Year College*, 25, 21-24.
- Knight, J. (2006). Investigating geography undergraduates' attitudes to teaching, learning and technology. *Planet*, 16, 19-21.
- Lippincott, J. (2005). Net generation students and libraries. In D. Oblinger & J. Oblinger, (Eds.), *Educating the net generation* (pp. 13.1-13.15). Washington: Educause.
- Motiwalla, L. (2007). Mobile learning: A framework and evaluation. *Computers and Education*, 49, 581-596.
- Mutch, A. (2003). Exploring the practice of feedback to students. *Active Learning in Higher Education*, 4, 24-38.
- Naismith, L, Lonsdale, P., Vavoula, G. & Sharples, M. (2004). *Literature review in mobile technologies and learning*. Bristol: Futurelab.
- Power, D. (1990). The use of audio in distance education. In S. Timmers (Ed.), *Training needs in the use of media for distance education* (pp. 43-60). Singapore: Asian Mass Communication Research and Information Centre.
- Race, P. (1999). *Enhancing student learning*. Birmingham: SEDA.
- Scanlon, E., Jones, A. & Waycott, J. (2005). Mobile technologies: prospects for their use in learning in informal science settings. *Journal of Interactive Media in Education*, 25, 1-17. Retrieved June 28, 2007 from <http://jime.open.ac.uk/2005/25/scanlon-2005-25.html>
- Strivens, J. (2007). A Survey of e-pdp and e-portfolio practice in UK Higher Education. Retrieved July 5, 2007 from <http://www.recordingachievement.org/downloads/KD-HEAe-portfolio-survey.pdf>
- Welham, K. (1999). Tape recorded feedback. In I. Moore & K. Exley, (Eds.), *Innovations in science teaching 2* (pp. 35-39). Birmingham: SEDA.