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Digitally Enhanced Learning: Facing up to the Camera

Digitally enhanced learning is challenging many aspects of traditional education. Barry G. Blundell FBCS highlights some practical and ethical consequences of recording and streaming lectures.

At last the lecture room doors swing open and tenaciously guarding my cup of coffee I try to move against the great tsunami of emerging students. Immediately behind me follow two technical support staff weighed down with equipment and cables. We are well aware that the incumbent lecturer has (as usual) overrun his allotted time and so we are running late. The clock is ticking - my lecture is due to begin in seven minutes, and in terms of technology, there's a lot of setting up to do.

In line with the growing trend, my lectures are recorded to allow asynchronous replay via the course's virtual learning environment (VLE). They are also streamed to students at a satellite campus and to others who, due to personal circumstances, cannot attend. Mediasite supports both activities and in addition Skype allows remote students to ask questions during lectures.

Cables are speedily connected, Mediasite hardware and camera are set up, and the system is powered on. At last, with forty seconds to spare, I receive welcome news from the teaching assistant in the remote classroom – the video links are working, no technical glitches today – so far.

Increasingly, tertiary institutions are installing video recording and streaming facilities (including lecturer tracking systems, etc) in lecture rooms. This avoids the pre-lecture pressures associated with setting up equipment under severe time constraints. However, as such facilities become more widely available, it is likely that their use will not be decided by teacher preference but will be imposed by institution policy and student expectations. In short, teaching in front of the camera will become the norm, and this has significant consequences.

Student's Perspective

Students certainly do like to be able to asynchronously replay lectures, and this advantage is particularly welcomed by students who don't have English as a first language. VLE data confirms the intuitive expectation that access to recordings increases significantly as exams approach. Contrariwise, the often stated notion that supporting full asynchronous replay of lectures will significantly impact on physical attendance is not supported by my experience to date.

Initially the reaction of remotely located students to lecture streaming is less favourable. Under appropriate conditions, which include the presence of a skilled teaching assistant in the remote classroom, a conscious effort to frequently and directly address the remote audience, and a sustained determination to ensure that the warmth of communication is not impaired by the transmission medium, student attitudes quickly

change and so far there is no indication that streaming has a negative impact on student engagement, subject interest, and overall course performance.

It is of course imperative that technical issues don't cause any delay to the start of lectures, and audio/video must be of a consistently high quality. In short, reliability is crucial. Even when lecture theatres have inbuilt streaming facilities, pre-lecture testing remains essential and must include verification of the status of relevant technology in the remote classroom(s).

Lecturer's Perspective

Viewing recordings of ill-prepared or poorly delivered lectures is an uncomfortable experience. This may suggest that the increased use of video techniques will drive improvements in teaching. Unfortunately this is an oversimplification because some staff (who may be quite confident in teaching even very large classes) simply find the presence of the 'electronic eye' unnerving, and any lack of self confidence is immediately evident in a recording. The obvious solution is to 'forget' the camera's presence - but in order to ensure that the remote students feel fully included, the lecturer's attention must continually switch between the physical and the remote audience, which means regularly 'talking to' the camera. To forget the camera's presence means to forget the existence of the remote students - which is a recipe for failure.

Of course in relation to asynchronous replay there is the opportunity to edit a recording prior to making it available (although this is a tedious chore). In contrast, in the case of streaming this is a luxury that doesn't exist and so ill-considered remarks must be studiously avoided.

Without doubt the enhanced opportunities offered by supporting asynchronous replay and streaming place onerous responsibility on the lecturer and require a significant degree of personal commitment.

Who is Watching?

My lecture proceeds. Elsewhere in the university a senior management committee meeting is in progress. The current topic on the agenda concerns 'capitalising on technologies in teaching'. Mediasite is mentioned and since some attendees have never heard of it, discussion digresses. With a degree of inspiration and to clarify Mediasite's streaming capabilities (or perhaps to provide a welcome diversion), one of the committee members recalls that my lecture is taking place at that very moment and that, due to peripheral interest, he has access to the relevant Mediasite link. Seconds later and entirely unbeknown to me, the senior management committee are watching my teaching on their big screen.

Secondary Use

The primary motivations for digitally enhanced learning centre on advancing the profundity, scope, accessibility, flexibility and efficiency of the educational experience. Additionally the infusion of technologies into the teaching process results in an inherent increase in transparency of process. Although in principle this is a desirable outcome, it has potentially negative ramifications which are of concern to many teaching staff. As a result, in the absence of mutually agreed ground rules (code of best practice) staff are often reluctant to fully integrate VLE's into their courses and studiously resist the use of

video recording/streaming technologies. Although benefits associated with these approaches are generally acknowledged, key concerns centre on content access rights, and future secondary usage issues.

Student feedback confirms that when provided with the opportunity to asynchronously replay lectures they often show interesting (and without doubt amusing) content to family and friends. Whilst this is quite understandable, the senior management committee viewing scenario (which came to my attention quite by chance) has a less satisfactory ethical dimension. Clearly, uncertainty as to who may be watching (and why) has the potential to compromise the teaching process and so the lecturer must have confidence in the validity and enforcement of access controls and protocols.

Digitally enhanced learning (in its many forms) is increasingly included in staff induction courses and this is complemented by the growing investment in video recording and streaming infrastructure. As the use of these facilities becomes the norm rather than the exception, there can be little doubt that submission of recorded content will become a required component in staff assessment and promotion exercises.

Clearly there is an important role for the BCS to play in the development and promotion of best practice guidelines.

Towards Tomorrow

Despite these concerns the judicious infusion of technologies into the educational experience offers many exciting opportunities and has the potential to significantly advance excellence in teaching. Contrariwise, technology infusion does not compensate for poor teaching practice – and can actually make things worse.

For my part, I shall continue to explore the incorporation of effective technologies in teaching - provided that they offer clearly demonstrable benefits and that they address the needs of today's students. In parallel, I shall no doubt occasionally reflect on my days as a physics student sure in the knowledge that I continue to benefit from the rich scholarship of chalk wielding lecturers who would never have faced a camera and who took for granted their students' ability to listen, interpret, understand and take notes.