

Enabling digital participation in Higher Education

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Abstract

This paper reports on a research informed teaching project which explored the role of technology in the delivery of the Secondary Post Graduate Certificate of Education (PGCE) at Birmingham City University. Our study highlights the problematic nature of imposing a set of normative uses of technology within teaching and learning and suggests that the student voice has an important role to play in shaping innovation.

The research project focussed on a pocket-sized camcorder which was issued to staff and students involved in the study. Lecturers were requested to experiment with the technology to supplement their existing practice while students were asked to use the technology during their teaching placements. Both lecturers and students were encouraged to share video clips of their work on a specially created secure repository.

We believe this investigation is important as it examines the introduction of new technology from both a student and a teacher position. It examines a number of current developments and concerns including adoption of technology into the learning and teaching process; incorporation of web technology and social networking sites into a teaching programme; the implications of such developments when external organisations are involved; and the willingness of both lecturing staff and students to experiment with new technologies.

Keywords

technological determinism, social constructivism, pedagogy, web 2.0, new media, public and private

Introduction

There is often a rush to adopt new digital learning technologies, primarily because of their 'newness' and not because of a considered analysis of their value to the learning and teaching process. Furthermore, technology is often presented in a restrictive manner which implies a set of normative uses. This paper considers both a prescribed and a negotiated integration of new media and web 2.0 technology into a course at Birmingham City University. The case study is analysed through the lens of debates around deterministic and social constructivist approaches to using technology in education.

Previous attempts to use video for reflection in teacher training floundered because equipment was cumbersome or required specialist facilities such as 'observation classrooms'; newer video equipment promises simple production, editing, and

sharing of content. In our study, trainee teachers were provided with new-generation pocket camcorders and a Web 2.0 solution to share video for reflective practice. They found the technology easy to use, but did not use it as we outlined.

Our study highlights the problematic nature of imposing a set of normative uses of technology within teaching and learning; we concluded that the role of the student voice should be foregrounded in determining the best use of technological innovation, through a social constructivist approach to technology.

Theoretical Framework

A review of literature suggests that the uptake of technology is often not related to a sound rationale grounded in learning and teaching; instead there are expectations that technology is of itself beneficial and will somehow create better learning opportunities:

"Technology seems to be under scrutiny for some inherent abilities to help teachers teach, help learners learn and fundamentally change the social and educational context of classrooms" (Ferdig, 2006: 749)

Ferdig is describing a position here that might be understood as technologically determinist:

"the uses made of technology are largely determined by the structure of the technology itself, that is, that its functions follow from its form" (Postman 1993: 7).

Technological determinism, when understood positively, tends to lead to utopian positions on the power and utility of new media technology; there is a common-sense idea that the technologies are transformative and beneficial. Dystopian positions on technology also exist, but we would suggest that such voices are sidelined in debates around the role of these technologies in education. A primary reason for this is that the uptake of these technologies is driven through policy. In 2005, the Higher Education Funding Council for England (HEFCE) outlined its strategy for e-learning, which included providing support for universities to develop and embed e-learning over the following 10 years (HEFCE, HEA and JISC, 2005).

The strategy also placed an emphasis on blended learning, in which e-learning technologies are integrated with face-to-face teaching, rather than used separately for distance study. This support for the use of technology to enhance mainstream university learning and teaching also formed part of the 2006 HEFCE strategic plan for higher education (HEFCE, 2006) (Adapted from Russell, 2008: 23).

While the requirement to engage with new technologies has been driven by government, educational institutions have recognised that embracing such developments will prove advantageous to them. New media and ICT are generally understood to deliver cost benefits and efficiencies, and are attractive as "there has been growing pressure on higher education institutions in Europe, Australia, the USA and elsewhere to demonstrate their efficiency and effectiveness, among other things, by managing expansion without a comparable increase in resources and with no decline in quality (or standards)" (Harvey and Knight; 1996: p.7). Some scholars (Fuey 2009; Flichy 1999) suggest a technology discourse which makes claims of progress and modernity on the part of new (media) technologies. Thus the adoption

of new technology is indicative of being a progressive institution; technological progress can be seen as a way of investing exchange value into a commodity (Fuery 2009: 12) i.e. building competitive advantage into an educator's programmes of study. Put more simply, students and their sponsors expect educators to offer a compelling account of their use of new technology, and such accounts are generally seen as a selection criterion when making educational choices. Thus there are expectations that educational institutions will be seeped in learning technology, and this may impact upon the way in which those institutions approach technology. Firstly technologies are critical to the institutional mission, and secondly they are a problem which can be solved through procurement of more and newer equipment. Gärdenfors & Johansson (2005) see this focus on procurement of more equipment as a barrier to the real conversation we need to have about pedagogy:

"It is not simply the number of computers in the classrooms that is the bottleneck of the progress of ICT in education. Above all, it is our lack of understanding of the complex processes contributing to human learning and how they interact with new technologies" (Gärdenfors & Johansson, 2005: ix).

Kirkwood and Price (2005) argue that innovation should not be driven by technology and "consideration... given not only to the characteristics of technologies, but also to (a) the pedagogic models and processes they have to serve; and (b) the contexts within which learners engage with ICT" (Kirkwood & Price, 2005: 270).

It has also been noted that one of the purposes of online technology is to stimulate offline activity, not replace it. As Bradwell (2009: 57) notes:

"Students not only value the face-to-face experience with teachers, the peer discussions, they also require a sense of belonging to the institution. Technology does not do away with that."

Regardless of the medium being used, it is unlikely that students will make use of materials and activities unless they are embedded in the course pedagogy. If materials are not linked to the assessment strategy then the medium is likely to be unused and its potential will remain fallow (ibid: 272). That is not to say that we believe technology to have no place in learning and teaching. On the contrary, we believe new technologies offer many opportunities to improve practices. What is problematic is the way in which technological opportunities are structured. Solutions are procured within institutional determinants of needs analysis, budget allocation and IT processes and delivered to learners and teachers fully formed; outcomes and uses are pre-structured based on technology and not learning cultures. Our case study, outlined below, allowed us to explore these issues in more depth.

Case study: using technology to support student teachers during off-campus learning

The case study project was conceived as part of a learning and teaching innovation programme that ran at Birmingham City University during the 2008-2009 academic year. The lecturing team responsible for the Secondary PGCE programme were looking for ways to support student teachers during the long periods they spent off-campus on teaching practice and were considering the impact of meta-teaching, seeking ways to increase the employability of the initial teacher education (ITE)

students. Video recording of individual teaching practice for formative assessment and peer review had been attempted in previous years. Although the team still felt the need to provide support during these off-campus periods, the obtrusiveness of the equipment and the difficulties encountered when transferring footage to computers for editing meant that the process was quickly rejected. The Flip Ultra video camera, was a new product at the outset of the project. It seemed to overcome the undesirable features of previous video cameras. The Flip was designed to be compact, and user-friendly, both in filming and post-production.

Methodology

A Flip camera was tested within a school environment; this included using the camera in a variety of light and noise conditions. The results were positive. It should be remembered that the object of the project was not to capture footage of premium quality, but to record an event that could be shared for a short time and then discarded. The testing also revealed that the sound recording of the Flip was of good quality, which was an important consideration.

We devised training sessions to introduce both staff and students to the camera. Accordingly, a session was delivered to subject leaders from the Secondary PGCE course. The tutors were then requested to enlist trainees to take part in the project. Once selected, the initial orientation training session was delivered to the trainees. All trainees involved in the project had taken a traditional route from secondary to tertiary education and were therefore mostly 25 or under during the course of the study. The selection process by tutors had been mindful of gender and ethnicity balance to the extent allowed by the cohort of students available and their willingness to take part.

The trainees' first teaching practice takes place in pairs and this was viewed as an ideal opportunity for them to use the camera as a reflexive tool. However, as previously mentioned, this was not deemed a compulsory exercise and the trainees were free to use the cameras creatively. Similarly, course tutors were not given specific tasks but were encouraged to use the camera in ways that were beneficial to their teaching practice.

A primary ethical concern related to 'safeguarding' was the safety and security of children within schools who might be filmed as part of a teaching session or activity. The project necessitated the creation of a secure repository for footage taken by the trainees whilst on their initial placements. The University's own VLE was considered but, at the time of the project, was felt to be too inflexible to cope with the likely demands of the project.

After due consideration, a web-based video repository, Vimeo, was selected. Vimeo fulfilled the requirements of the project in that it could be made secure i.e., only those involved with the project would be able to view videos posted to the project space, it was relatively easy to upload videos to the site and it incorporated a social element, which could be utilised by project members as a forum for peer review and feedback.

Once Vimeo had been selected, trainees were invited to join the secure project site so that they would be able to post video clips and view videos posted by other project members. The project team were concerned to ensure the safety of pupils at the placement schools to be visited by trainees. To ensure that the aims of the project were clearly delineated, a letter was sent to head teachers of participating schools, which explained the purpose of the project and the existence of the video repository. Head teachers were given the opportunity to refuse permission for pupils to be filmed and trainees, via a code of conduct were instructed to abide by any such decision and not to film unless permission had been granted.

To capture the trainees' experiences, the Vimeo site was monitored during the placement period and a focus group was convened with the project trainees on their return to University. As noted above, for their first placement, trainees attended schools in pairs. It was initially envisaged that this would provide the ideal opportunity for them to use the cameras to film each other taking a lesson and share their experiences with each other, their University tutors, and their peers via the project repository.

The monitoring of the Vimeo website had indicated little activity from the trainees both in terms of posting video clips and utilising the social space. The focus group gave the project evaluation team an opportunity to explore the trainees' experiences in the schools in greater detail.

Focus groups were held with both trainees and staff to evaluate usage of the technology in their work settings, identify any barriers to engagement and determine if both groups felt that use of the technology was beneficial or detrimental.

The focus group with the trainees consisted of two elements; firstly, upon arrival, the trainees were asked to comment, via a self-completion form, on issues relating to the equipment e.g. ease of use, the process of using the camera, reactions from pupils to the intervention, and to state whether they felt that using the technology would benefit their professional development. These areas were then expanded upon in greater detail in the focus group.

In terms of project evaluation, the first item that should be noted was that a number of respondents reported that it had taken some time to get permission to use the camera; some reported that permission had been denied. The trainees reported that they found the Flip itself fairly easy to use. There were, however, some problems with downloading the footage from cameras; some of this was related to the ICT provision within the placement schools. It was also evident that several of the trainees had reservations about the amount of time they could devote to using the camera i.e. shooting video, downloading and sharing etc, when the placement itself was intensive and left little spare time available.

The most interesting aspect of the discussion related to the use of the cameras within the school environment. It was evident that a number of trainees had used the camera to film themselves teaching and that this had been beneficial in some cases. One trainee reported that she had realised how important gestures were when viewing footage and that she also noticed that she was 'pitching' questions at too

high a level. Watching the footage had helped her to moderate this aspect of her practice.

It was also apparent that the trainees had used the cameras for recording different activities with pupils. These included wind band rehearsals, art technique demonstrations, cookery classes and filming a trip to the park. It was reported that the children had responded well to seeing themselves on video, especially in the case of the wind band. However, other trainees reported that some children had not responded so well to the camera; one stated that he had in fact stopped using the equipment as it was taking too long for the class to settle. There was also a recognition that pupils responded well to visual teaching techniques and that the camera lent itself to producing a record of practice that can contribute positively to the overall learning experience:

“Students respond well to visual representations of techniques. These can be projected leaving the teacher free to access students learning. [The technology can] address visual learners/ varying teaching styles. [It can also be used to] document students’/ teachers’ progress, document a trip, create a resource of artistic/ subject techniques or produce a DVD.”

The trainees also felt that the technology had potential to be used in a variety of ways as they progressed with their careers. Ideas proposed included peer assessment, evaluation of teaching practice and including the camera as a resource for the children themselves to use. One trainee did note, however, that the usage of such technology depended a great deal on the resources available in individual schools.

The question of the non-usage of the project repository was raised with the trainees. It was generally agreed that time was the key determinant for this – available technology and difficulty in downloading footage from the cameras were also volunteered as reasons for the lack of take-up. It was also evident that trainees were more comfortable with using existing modes of communication to contact their peers:

“No time – we usually cry on Moodle - or facebook!”

A focus group was also convened with participating staff members to gather their views on the project. As with the trainee focus group, teaching staff were initially asked to complete a sheet, which explored some broad themes relating to the project; these themes were explored in greater depth during the session. Similar to the trainees, staff had not been given a prescriptive project brief; rather, they were encouraged to experiment with the camera and assess its usefulness and potential to be embedded in future practice. Again, the focus group provided an ideal opportunity to talk around staff experiences and potential adoption of similar technologies and techniques.

As with the trainees, staff noted that the issue of obtaining permission to use the cameras within school had been a major issue. It was generally agreed that the problem had been caused by the fact that Vimeo, the project repository, was web-

based. Staff members were more aware of the problem that capturing images within schools can pose. The ethical safeguard was that if one parent had refused permission for their child's image to be used, then no capturing of images could take place at all. It is recognised that this is an on-going concern. It was apparent to staff however, that these restrictions had led to a more creative exploration of the camera by both themselves and the trainees.

The fact that the University's own VLE, Moodle, had not been used as the repository was a source of some debate. Moodle had been considered, but had been rejected due to issues relating to the space available to post video clips, which in some circumstances could consume considerable memory. However, it was generally felt that permission to film within schools would not have been so problematic to obtain if the repository had been 'in-house'.

In terms of staff usage of the camera, this tended to focus on two distinct areas, creating resources for use with trainees and capturing footage of the trainees to assist them in identifying areas of their practice that were successful or that needed attention:

“Used to record ‘International Market’ Year 2 BA QTS Thinking & Learning across the curriculum – will be used to demonstrate activities for the rest of cohort & next years group.”

“Many, many uses, particularly for drama. An essential tool for AFL – as pupils can find it difficult to view their own performance when they are in it.”

Staff recognised a number of potential uses for the technology including the following:

- Bringing to lectures footage of appropriate related practice – vocational, gallery, site specific examples;
- Evaluating and adjusting classroom practice;
- Showing practice;
- Visualising aspects of practice.
- Creating enriched visual teaching resources.

One lecturer summarised the general feeling towards the technology and its potential use as follows: “I think the more I use it, the more I will realise the opportunities for enhancing teaching and learning”.

There was also some discussion relating to the lack of sharing of clips amongst the trainees and the possible reasons for this. Teaching staff felt that the initial teaching practice can be a particularly stressful time and that those less confident in their abilities might be loath to post videos of their performance in the classroom. It was also noted that trainees were sharing their experiences with their school based training mentors, including viewing footage of their practice, but were not inclined to share with their peers. Again, it was felt that if the repository had been on the University VLE, this might have encouraged the sharing of clips via the 'envy' factor.

The difficulties with permission caused by Vimeo and, in some cases, difficulties in downloading footage from the cameras, might also have been contributory factors.

An interesting aspect of the project was that there appeared to be a disciplinary split in relation to involvement with the project. Staff from Art and Design, Design Technology and Drama reacted favourably to the intervention and could see the potential for future usage of similar techniques. Trainees engaged with these disciplines tended to be the ones who experimented with the camera and were more creative. Other disciplines, including Mathematics, tended not to engage with the project in any comparable scale. During the focus group with staff, it was noted that Maths teachers were more advanced in working with interactive white boards and this may explain their ambivalence. However, it would be interesting to investigate in greater detail the disciplinary divide.

A further focus group was held with trainees who had continued to use the cameras when they returned to the University in late June 2009. Problems with permission to use the camera persisted. One trainee advised that the school were happy for her to use the camera for demonstrations and her research project, but would not allow the filming of teaching sessions.

It was also evident that the cameras had been easy to use and that pupils had enjoyed the experience of being filmed. The trainees also reported that they now had an awareness of the technology and its potential uses. One trainee felt that a little more training was necessary, however, to achieve better results. It was also reported that the existing level of ICT provision in schools can often dictate how new interventions can be utilised. One trainee reported that both the computer systems and white boards in her placement school were in a poor state of repair and this had hampered the use of the camera:

“It depends on the individual school. There are budget implications as well. A lot of school computers are too slow, networks are rubbish and do not have enough memory. Sometimes you can’t get the computers running and applications such as Photoshop are very slow”.

The trainees again reported a reticence in sharing clips of themselves teaching, with one stating that she would only be happy to share clips with her tutors. There was also recognition of the security implications of using such applications:

“Kids filming each other isn’t a problem – but I think there is a wariness that clips might get out of the school environment – but this is not really any different from other technologies such as camera phones”.

The trainees also identified several disadvantages of the technology. These included:

“Money is probably one of the biggest problems – keeping the technology up-to-date”.

“You need to have proper facilities to use the technology as it should be used”.

“The preparation time – there is so much other stuff to do”

“A danger that if you use technology all the time it could become boring for the kids.”

Overall, there was a general consensus that the technology was useful for a number of purposes, engaged the interest of pupils but was dependent on a number of variables including sufficient ICT support and, of course, permission to film. Anecdotal discussions with project staff engaged in the Secondary PGCE course have revealed that both trainees and staff have experimented with the technology outside the confines of the project. Staff members have become interested in utilising the technology to record PGCE assignment presentations. The Flip camera enables quick and easy recording of practical sessions, which can be easily downloaded and used as evidence for external examiners for example and facilitates quick editing and naming. Two lecturers have used the camera to record interviews with artists/industrial practitioners, visits to site specific contexts and to film workshops at the University. These can then help to form a ‘bank’ of resources that be used with future trainees. In a similar way, another lecturer has captured demonstrations of professional techniques, which can then be used as an illustrative tool for trainees.

Trainees themselves have also explored using the camera as an assessment tool. One lecturer noted that several trainees recorded themselves giving a presentation rather than delivering the presentation live. In this way, they could control the strict time limit that was imposed for the particular assessment and present via an alternative to the ubiquitous PowerPoint. It is evident, that the Flip camera, or similar technology can be utilised to great effect by both staff and trainees and could be exploited by other departments within the University. The project has, however, identified several areas of difficulty that will require negotiation for future interventions to be successful.

The overall aim of the project has been achieved in part. The assessment of the take-up of the technology has taken place; feedback suggests that technology of this nature will be incorporated, to a greater or lesser extent, in future practice. Assessing the impact on learning and teaching is a little more problematic and would perhaps necessitate a longitudinal research study. However, we can tentatively state that the project has been successful in cascading an approach from the Institution to its trainees and onwards into the workplace.

Conclusions

The case study project explored a technology based learning and teaching innovation, and demonstrated a number of issues which arise from such technological innovations. For example, the project served to illustrate that external barriers can often be disruptive. In this case, head teachers’ concerns relating to the safety and security of pupils proved an obstacle as did the provision of ICT in some

schools. This is a salutary reminder that technology often does not seamlessly transfer between environments and that 'real world' testing is recommended.

Similarly, it is important to recognise the differences that exist between academic disciplines that might impact on the take-up of a technology. This was illustrated by the different levels of enthusiasm for the technology demonstrated by staff within the same faculty at the University. It is also necessary to provide adequate training in the use of the technology to potential recipients; in this instance, the technology was relatively simple, but perceived difficulties with the process have discouraged take-up.

The study illustrated that users will often use technology for purposes that suit them rather than for a recommended purpose. We can hypothesise, therefore, that the purpose of any proposed intervention should not be prescriptive and that users should be given an opportunity to be creative with the technology. In such circumstances, it is important to ensure that regular monitoring of an intervention is in place to capture examples of creative use, which can then be disseminated to peers and colleagues.

Our experience with this project suggests that it was not the technology but the process of recording and sharing practice which was ineffective. Previous attempts to integrate this practice into teaching and learning had been blamed on cumbersome technologies not on other factors related to the learning culture; designing the process around a "simpler" technology did not fix the problem as lecturers perceived it and did not lead to the intended outcome of the intervention. However, the technology was useful to the student teachers and to staff in unexpected and unpredictable ways. In a sense, the socially constructed uses of the technologies in this case study proved effective whereas the well-intentioned drive to apply technology prescriptively to a problem was less effective.

The choice of trainee teachers as a research sample also has attendant problems. Teaching practice is inherently stressful and it is evident that many of the sample did not have time available to experiment with the technology. It would therefore be interesting to replicate the research with students from other disciplines and contrast the findings. Similarly, unpicking the differences in uptake between staff members would prove an interesting exercise.

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