SYMPOSIUM

multimedia learning: lessons from the PARLE project

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Abstract

The Politics Active Research Learning Environment (PARLE) was a £250,000 project to develop multimedia learning materials aimed at politics postgraduate students. Although the project fulfilled all its ambitions, a number of lessons have been learned that might inform others wanting to use the multimedia route for their teaching. This paper considers some of the mistakes made, how they could have been avoided and lessons for the future production of collaborative projects such as PARLE.

Keywords   e-learning; postgraduate; research; FDTL

In this paper, we will be reflecting on some of the lessons learned from the development and production of a multimedia learning resource. The aim is to provide advice for others who may be embarking on the use of e-learning in one of its many forms. The lessons we have learned from the Politics Active Research Learning Environment (PARLE) project will hopefully help others to avoid some of the errors that we made.

In this article, we are concerned with one sort of e-learning. This is learning mediated by a computer, but delivered via a DVD-Rom. In essence, the PARLE project is a web-based application, in that it is designed to run using a web browser. It is delivered via DVD primarily because it includes a large amount of video material that would otherwise need to be streamed from a central server. As technology improves it is likely that the entire PARLE interface will migrate to one (or many) virtual learning environments (VLEs).

With the ever-growing development of VLEs, many academics will find that dusting off those old lecture notes once a year will no longer satisfy either their 'student consumers' or their 'eager-to-embrace-new-technology' managements. Browne *et al* (2006) found that something like 95 per cent of higher education (HE) institutions in the UK now have a VLE. Bell *et al* (2002) note that VLE usage is not uniform however. At one extreme it involves the delivery of entire courses via a VLE, while at the other online resources are used as a supplement to face-to-face courses. Although most HE

institutions have recently adopted some form of VLE to support technology-enhanced learning, what evidence there is suggests that much remains to be done in terms of exploiting ICTs for *rich pedagogical use* (Zemsky and Massy, 2004; JISC and UCISA, 2004). The intention of PARLE was to produce a resource that could be used alongside face-to-face teaching.

PARLE

The aim of PARLE was to produce a state-of-the-art research methods course for politics postgraduate students. This resource was intended to fill the gap noted by the Economic and Social Research Council (ESRC) in its *Postgraduate Training Guidelines* (2000: Chief Executive's Foreword):

> We have become increasingly aware of a deficiency in the research skills of many of the UK's social science disciplines. This concern is reflected to us not only in the applications submitted to ESRC for funding, but also in the difficulties institutions have experienced in recruiting suitably qualified staff, and by government departments that have also experienced serious recruitment problems.

The initial consortium members (from the Open University (OU), York University and the University of Huddersfield) all had experience of teaching research methods to postgraduate students and had become aware of two factors that supported the ESRC view. First, postgraduates were no more interested in research methods than their undergraduate counterparts. Although the nature of dissertation or thesis work might encourage postgraduates to think about methods as a form of data collection, most did not engage critically with the epistemological issues and saw methods merely as a skill to be learned in order to collect data.

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Subsequently, all of us had experienced the depressing feeling of marking poorly constructed research projects by postgraduates with excellent skills in their subjects, but no real clue as to how to collect or analyse data. Second, most politics postgraduate research methods courses were being taught by generalists, not those with an intrinsic interest in politics. For the most part, the examples used to illustrate particular methodological approaches were not drawn from areas that interested students of politics and international relations.

We felt that in order to increase the capacity of politics postgraduate students we had to create materials that were both subject specific and interesting. We were therefore keen to exploit the new technologies available to us. We took an early decision to create a course that could also act as a resource. PARLE was produced with the assistance of a £250k grant from the Higher Education Funding Council for England (HEFCE). It was always an ambitious project. Initial reaction to prototype DVDs from tutors and postgraduate students has been positive (see feedback below), but there are lessons for those who might like to develop multimedia teaching materials.

COST

As Weller (2004) points out, the costs of multimedia and e-learning can be prohibitive and it is difficult to achieve economies of scale. In the first iteration of the PARLE budget, a sum of just over

£20,000 was earmarked for production. In the event, production cost over five times that figure and consumed almost half the available budget. What this meant in real terms was a shifting of resources away from desirables such as visits to departments, and focus groups with students, toward production of the DVD. Indeed, the PARLE project has become dominated by production. The shift in resources also meant that we were always close to going over budget and the OU's Faculty of Social Sciences had to be prepared to underwrite any potential overspend. This meant that the Project Director had to have some uncomfortable meetings with the Faculty Accountant (but that is another story…).

While this might appear to be just bad planning on our part, under-budgeting on production costs is an endemic feature of multimedia production. Software designers, sound editors, vision producers, actors, cartoonists and graphic designers are not cheap. But until they begin their work it is never clear exactly how much time they will require to turn vague ideas into something usable. So, if academics are determined to experiment with VLEs and/or multimedia platforms, they need to ensure that somebody is prepared to underwrite them when they have spent their budget and may have little to show for it.

THE PROCESS OF CREATION

If cost and technical expertise are not impediments to the production of these types of materials, then imagination certainly can be. Nobody on the PARLE authoring team had any direct experience of producing such materials on such a scale. Most contributors, of whom only this article's authors were directly employed at the OU, found it extremely difficult to adapt to the medium. This may have been partly a function of the way production was organised (for more

see below). The 'problem' was that almost all the tutorial authors (there are thirteen tutorials on the disc), produced 'chapters' as if they were writing for an edited collection. These were, of course, largely text based. Much of the interaction was borrowed from classroom settings and was of the 'look at this and then think about…' variety. While such techniques work well in face-to-face seminars and workshops they are ineffectual with students sitting at a computer late at night in their own home. It would be easy to 'blame' the authors for failing to embrace the medium, but this would be to negate the importance of the brief they were given by key members of the project team, particularly the authors of this article.

The use of CD-ROMs in educational materials is not new, an early example being 'A right to die' that was used with third-year undergraduate students at Staffordshire University from 1996 (see Moss, 2000). The OU has long been an advocate of what has come to be called 'blended learning' (Laurillard, 1993) and was one of the early adopters of new technologies. Such technologies sat well with the mission of a university whose students were studying at a distance. Student reaction to the use of video, audiotape, interactive software, TV programmes and more recently DVDs has been, on the whole, positive (see Kirkwood, 2000, 2003; Kirkwood and Price, 2005), But OU students are not the same as campus-based students because unlike 'traditional' universities the OU has no campus-based undergraduates. All undergraduates are taught at a distance and are often entirely remote. Experiments with e-learning in campus-based universities have had a more mixed response (Concannon et al, 2005). One of the challenges for PARLE was to harness approaches developed for distant students, to use in campus-based universities. It was never our intention,

however, to replace campus-based learning with e-learning. As Aspden and Helm (2004: 251) have noted,

> Where it is used appropriately, the effective blend of face-to-face and online learning opportunities provide enhanced opportunities for students to maintain their connections with their learning experience according to their particular needs. Students who – for whatever reason – are unable to attend campus are able to continue their work alone while, at the same time, sustaining contact with others...

This is an important point, for it is precisely the advantage of having a portable resource that prompted the use of the DVD format, but the tutorials were always intended to be supplemented by face-to-face provision. One reason for the emphasis we placed on 'blended learning' was precisely that while students are increasingly familiar with new forms of technology, their lecturers are not. Following one departmental seminar given by the Project Director, an advocate of PARLE remarked, 'It is not the students you need to convince, they will love it – it's the staff that are the problem'.

Another challenge was to create a product that was 'blended' and as one student evaluator put it, 'did not simply pass the cost of printing to us...' Although there is some evidence that students do marginally better in online environments than 'traditional' ones this evidence is based on small self-selected samples (see Thurston, 2005; Kennedy and Duffy, 2004 for examples).

The project leaders were certainly aware of the challenge and, if truth be told, rather excited by it. The problem was that like those they were leading, they had little experience of how to meet these challenges. It became clear at early project team meetings (to which all contributors were invited) that the majority of contributors were comfortable with text, but were looking for guidance on how to make their text interactive.

The process of production was designed to be linear. This, we now realise, was an error on our part. Authors were contracted to produce in stages. The first stage was to be no more than a series of sub-headings under which the tutorial would be organised. It is worth pointing out that at this stage we were still calling individual tutorials 'chapters', a word which probably sent entirely the wrong message to other contributors. The second stage was to provide learning objectives for each of the headings produced in stage one, while stage three was meant to develop teaching strategies including suggestions for interactive exercises. Following these three stages assets (software, audio and visual) were to be created at the OU, and contributors would then write text around these assets. We had anticipated stages one to three taking approximately three months and stage four being completed in about six months, allowing the entire DVD (or CD-ROM as it still was at this stage of the project) to be ready for classroom launch in October 2006. This launch would have given us almost a year to test and evaluate the product.

If this production schedule had been met we would have been very happy indeed. Sadly, there was room for slippage at every stage. Most contributors managed stage one without any difficulty. Stage two caused some minor, but not serious slippage. It was at stage three that problems occurred. There were two inter-related problems. First, contributors were not really sure how to make the link between stages, so that typically they could not work out quite what to say in stage three. Second, the transition from learning objectives to teaching is complex and required intervention in order to maintain academic coherence. But it also emerged as we wrote that stage three and stage four were not really stages at

all, and that to move from a teaching objective to an interactive tutorial was far more difficult than anybody had imagined. Contributors also had differing creative 'styles'; this meant that this rigid form of writing did not suit everyone. We became aware in late 2005 that it was unlikely that we would be in a position to develop the DVD in 2006 without drastic action. Although we had four or five tutorials in a state where they could be evaluated this was nowhere close to being a full course, which was what we had promised. It was at this time that we decided to incorporate the OU course team model into our creative process.

THE OU COURSE TEAM MODEL

Course teams at the OU are organised on democratic lines, with strict quality control mechanisms. The development of courses is a lengthy process involving discussion of colleagues from a particular department with other interested academics, external authors, software and sound and vision representatives. The most important aspect of the course team process is the draft chapters, which are reviewed and critiqued at fortnightly meetings. In principle, each chapter is expected to go through three drafts before being submitted for editing and eventually handed over for printing. This system is the backbone of the production process for the high quality courses produced by the OU. Although as one faculty colleague remarked in an email: 'The important thing to remember is that every course team is different... and no single model guarantees success or failure...' (Steve Pile, personal communication, March 2007).

It was always going to be difficult to replicate this process with a project team comprising authors almost all of whom were external to the OU, and who were from as far afield as Bristol, Leeds,

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London, Lincoln, York and Birmingham. Our answer was to set up a system whereby we brought two authors at a time to the OU in Milton Keynes for meetings about their tutorials. The idea was that each author would read and critique the other's work and that in this way we could replicate the quality assurance procedures familiar in the OU. We had hoped that during this process 'on-the-job' learning would take place. As contributors worked together to turn their text into interactive tutorials their creativity would be nourished and cultivated. This proved to be an overly optimistic expectation.

First, it was difficult to pin people down to dates that were convenient for everybody. Second, these were busy academics and they almost invariably missed their deadlines (don't we all, we are writing this article having had to ask for an extension to the original deadline!). Third, even when people turned up at the meetings many of their tutorials arrived too late for everybody to have read them beforehand, so the meetings tended to turn into sessions with the Project Director and the OU production team who had no option but to read everything. Fourth, and most crucially, the material was different to that of most course teams in that the multimedia was not an add-on to a largely text-based course, but *was* the course. The idea that we could critique the text and then send the author away to rework their tutorial in the light of that critique was naïve for the simple reason that the authors did not have the expertise or experience in dealing with multimedia that would have made their tutorials fit the medium.

WRITING TOGETHER

Towards the end of the project we discovered a rather more efficient method of working that would have been useful at the start. In the last month of the project with seven tutorials far from ready, a decision was made to organise a series of 'writing workshops' to which were invited core members of the project team. These were one-day workshops in which the participants were given the text of the tutorial, plus in some cases, the assets (usually film, but also some cartoons) and split into pairs in front of a laptop computer and told to write a tutorial. This was a creative environment in which participants were able to 'bounce' ideas off one another and to use the other people in the room as sounding boards if desired. The project software designer and sound and vision producer were present and able to answer any questions along the lines of 'Is it possible to do…'

The lesson here is not to over-estimate the ability of academics to move easily into the production of multimedia environments. The secondary lesson is to remember that writing multimedia applications is not easy, and crucially is nothing like writing for a text-based medium. By definition, multimedia learning environments must be richer. That means they must be more colourful, less text driven, more interactive and more visual. They are not, however, X-Box or Playstation games. Production needs to be collaborative and involve experienced multimedia producers and authors. It is better to follow an iterative software production model rather than expect to hand over a word-processed final project to be converted in isolation.

TEACHING METHODOLOGY

Within the PARLE DVD, now titled 'Doing Political Research' (for further information on the disc visit www.DoingPolitical Research.com), we have developed a simple but attractive interface that allows the student access to the thirteen tutorials. The tutorials are grouped into three sections: principles, collection and analysis. We had always envisaged a flexible entry to the materials to allow individual departments to integrate the DVD into their teaching in whatever way suited them best whether using all of it as a complete course or selecting specific parts.

In our initial conceptualisation, we had envisaged a rich non-linear environment in which students would choose their own way through the material. This was to be facilitated by the use of a virtual role-play scenario in which students were to become the political researcher for a busy MP, Kim Toopsin. Through a series of email exchanges the new researcher was to be given a series of tasks, which were to become cumulatively more difficult. These tasks, supported by a range of authentic topical materials (including articles from *Prospect* magazine that generously offered its material as sponsorship), were designed to suggest methodological problems. For example, the first task was concerned with immigration. This was introduced using an opinion poll on people's attitudes to asylum and immigration and reports from the government and from Migration Watch. The initial plan was that the student would access the tutorials on opinion polling and either secondary materials or discourse analysis either of which would have been relevant. From an early stage it was intended that the methods taught would be related to the wider issue of the use of political data in the public sphere. If used as a complete course, the tasks would suggest the use of a range of research methods, and the students would look at these tutorials alongside the topical materials in order to complete the tasks using their chosen method and therefore

complete their assessment. However, feedback on this subject-specific device was incredibly mixed.

LINEARITY

Most departments were more comfortable with a linear approach through the materials where they could know or direct what the students studied. This is understandable as it makes tutoring and assessing easier. In terms of authoring the tutorials, the non-linear approach meant that each tutorial needed very much to stand alone as there would be no way of knowing where students would enter, or the direction they would take in progressing through the materials. The feedback from users indicated that the 'virtual role play' was confusing and both tutors and students were unsure of which tutorials to access and when. This led to further confusion for tutors who were trying to maintain a series of face-to-face sessions around the DVD. Of course, a non-linear approach meant that students could, in theory, be accessing the tutorials in an almost random order. This raised some problems as authors had to presume only very basic prior knowledge of each tutorial topic. This approach was beneficial in coordinating a geographically dispersed project team. No author had to know the content of any other tutorial in order to make progress on their own. Of course the randomness would have to make logical sense, but given that a government report for example might quote a survey, provide interview transcripts and use focus groups, there can be no certainty as to where the students would find the information they wanted. In addition, the idea that researchers would want to access tutorials seemed a little beyond belief. In fact, when we interviewed parliamentary researchers for the DVD we found that few of them had any methods background at all, and so a product like PARLE might well be precisely

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the type of programme they would access were it available to them.[1] The main point here is that as a result of feedback we have removed some aspects of the 'virtual role play' from the disc to make it a linear programme containing thirteen stand alone tutorials. The lesson for others is perhaps to avoid being too clever just because you can, and to listen very carefully to feedback.

TUTORIAL FEEDBACK

Around 300 students were provided with evaluation discs containing five tutorials. In general, the draft tutorials sent out for testing have been very well received. Criticisms have been based around the amount of text on-screen that is now being addressed for the final release. There were also software bugs – for example, no back or forward buttons. There was some concern over the medium. One evaluator wrote: 'The experience wasn't like a DVD that I've ever used or like any text book that I've come across, more specifically, it wasn't as detailed and discursive as books usually are or as brief as web-sites or DVD's usually are'. This is an interesting quote because it shows that it is easy to fall short of expectations about what a DVD should do, rather than what it is going to do. Having said that we did receive very positive feedback with almost all those who filled in a questionnaire saying that they preferred it to a book. Our advice to others trialling e-learning techniques

would be to involve the user-group – students and tutors – as early as possible. We found that parts of the DVD that we particularly liked did not receive the unanimous acclaim we might have liked. The use of cartoon interfaces, for example, met with a mixed response. Some people clearly felt that the use of cartoons or comedy clips (we use clips from *The Office* and *Monty Python*) trivialised the material somewhat. However, on the whole, people have found the interface enjoyable and fun.

ADOPTION

A product like 'Doing Political Research' does not become used simply because it is of good quality and is readily available. We have learnt the importance of 'getting out there' and showing people what it does and how it can help departments meet the ESRC's guidelines on teaching research methods as well as bring these methods to life. Moving to e-learning is often seen as risky by academic departments as it involves change and puts some lecturers outside their comfort zone. This has meant that a large proportion of the project time has been spent on staffing stands at academic conferences, visiting and demonstrating prototypes to politics departments, and organising and running training events.

CONCLUSION

The production of PARLE has been quite a roller coaster ride with both highs and lows, negotiating partnerships and funding, working collaboratively with myriad production experts, trying different approaches to authoring, receiving both positive and critical feedback, learning about publicity, travelling and meeting many people and writing papers (!) but most importantly learning. Our key lessons for others are:

- Be prepared to spend a lot of time, effort and money in developing the product
- Be aware of the limitations of the medium
- Be aware also of the potential of the medium
- Make sure that collaborators are well briefed
- Bring people together to be productive as early and as often as feasible
- Do not allow the medium to detract from the learning objectives
- Involve the user groups as early as possible
- Be prepared to rip things up and go back to the drawing board when they don't work.

We believe that the final product is good but if starting again:

Would we do it differently? Yes, certainly Would we be so ambitious? Probably not Would we do it at all? That's a tough one, but yes! Have we learned anything and developed at all? Yes, certainly; but where do we channel all this newfound expertise?

Note

1 For further discussion of this see Middleton (2007).

References

Aspden, L. and Helm, P. (2004) 'Making the connection in a blended learning environment', *Educational Media International* 44(3): 245–252.

Bell, M., Bush, D., Nicholson, P., O'Brien, D. and Tran, T. (2002) 'Universities online: a survey of online education and services in Australia', Commonwealth Department of Education Science and Training, Occasional paper series 02–A, Higher Education Group.

Browne, T., Jenkins, M. and Walker, R. (2006) 'A longitudinal perspective regarding the use of VLEs by higher education institutions in the United Kingdom', *Interactive Learning Environments* 14(2): 177–192.

Concannon, F., Flynn, A. and Campbell, M. (2005) 'What campus-based students think about the quality and benefits of e-learning', *British Journal of Educational Technology* 36(3): 501–512.

ESRC [Economic and Social Research Council]. (2000) *Postgraduate Training Guidelines*, Swindon: ESRC.

JISC [Joint Information Systems Committee] and UCISA [Universities and Colleges Information Systems Association]. (2004) 'Managed learning environment activity in further and higher education', www.jisc.ac.uk/index.cfm?name=project_mle _activity.

Kennedy, D. and Duffy, T. (2004) 'Collaboration – a key principle in distance education', *Open Learning* 19(2): 203–211.

Kirkwood, A. (2000) 'Learning at home with information and communication technologies', *Distance Education* 21(2): 248–259.

Kirkwood, A. (2003) 'Understanding independent learners' use of media technologies', *Open Learning* 18(2): 155–175.

Kirkwood, A. and Price, L. (2005) 'Learners and learning in the 21st century: what do we know about students' attitudes and experiences of ICT that will help us design courses?', *Studies in Higher Education* 30(3): 257–274.

Laurillard, D. (1993) *Rethinking University Teaching. A Framework for the Effective Use of Educational Technology*, London: Routledge.

Middleton, D. (2007) 'Innovative approaches to political research methods', *The Parliamentarian*, Lxxxviii(3): 232–233.

Moss, B. (2000) 'Death studies at university: new approaches to teaching and learning', *Mortality* 5(2): 205–214.

Thurston, A. (2005) 'Building online learning communities', *Technology, Pedagogy and Education* 14(3): 353–370.

Weller, M.J. (2004) 'Learning objects and the e-learning cost dilemma', *Open Learning* 19(3): 293–302.

Zemsky, R. and Massy, W.F. (2004) 'Thwarted innovation: What happened to e-learning and why, a report from the learning alliance', University of Pennsylvania, www.irhe.upenn.edu/WeatherStation.html.

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