

Abstract

Using the analogy of e-learning as “the perfect storm”, the aim of this paper is to explore the disruptive nature of e-learning in Higher Education. Taking a Case Study of a University, the paper explores the movement from an e-intensive approach to e-learning into an on-campus blended learning approach. What are the lessons for higher education and how responsive are we to the new challenges. Is blended learning creating a new stability after change, or is it placing the University in the eye of the storm, a still small moment within an ongoing change process?

This paper will present findings from the ECW project looking at the disruptive effect on such a learning organisation from student, staff and management perspectives. It will conclude by moving the focus from the e-intensive ECW project to focus on the developments during the first year of a blended learning project and the disruption endemic in such a development

Key words

Adult learning, distributed learning environments.

“Over the worst or at the eye of the storm?”

1.0 Introduction

Being in Higher Education (HE) often feels like being in a maelstrom. There are disruptions that have both positive and negative impacts. Disruption is defined in a number of ways. It can be perceived as something unwelcome or unexpected and it can impede progress and development. However disruption, can also have positive outcomes. Watson (2001) states that Information Communication Technologies (ICT) are often seen as a ‘catalyst for change’, that impact on teaching style and learning approaches. Bonk (2004) describes emerging educational technology, enormous learner demands, enhanced pedagogical understandings and extensive cut back in funding combined as ‘the perfect storm’ that has propelled colleges and universities into a situation that requires quick and innovative adjustments in learning and teaching to ride the storm out. While many colleges and universities are still being caught in this ‘perfect storm’, the Case Study University in this paper has already weathered a number of storms and learnt first hand the disruption e-learning has created in HE over the past few years.

The University of Glamorgan (UoG) undertook a large-scale collaborative e-learning project, E-College Wales (ECW), during 2001-2005. The project was one of the first and largest e-learning projects in Europe. When the project started in 2001, the project team knew that the University was heading into a storm. However, like a city who thought it was prepared for a storm, the University was still caught off guard in a number of ways. The primary aim of the paper is to understand the impact of e-learning and blended learning and capture the reflections of all the stakeholders who have weathered the technology induced storms.

The ECW ‘storm’ was ridden out and this project ended in 2005. Using the lessons learnt the University decided to embark on a three-year institution wide project to embed blended learning across the University and its partner Further Education Colleges (FEC). What type of storm would this create? The movement from an e-intensive project to developing an on-campus blended learning strategy and implementation plan could be

seen by some such as Pedersen (2002) as moving ‘backwards’ in technology. With the emergence of new technologies (such as the new web 2.0 technology i.e. social networking software, blogs and pods etc) and the opportunity to incorporate these in blended learning, we would argue is not a move ‘backwards’.

The paper is of significant value to others still battling with the e-learning storms as it has had to contend with a number of them. The ECW project considers the disruptive effect on a learning organisation from student, staff and management perspectives. Taking the lessons learnt from this e-intensive project, the paper will focus on the development and implementation of a blended learning strategy during the first year. It reports on progress to date and judges the potential disruption endemic in such a development.

The University’s move from e-learning to blended learning represents a unique case study that will provide lessons learnt for Higher Education Institutions (HEIs) in responding to the disruptions created by e-learning. Is blended learning creating a new stability after change (hence the idea of ‘over the worst’ in the title of this paper), or is it placing the University in the eye of the storm, a still small moment within an ongoing change process?

2.0 Methodology and data collection

The project is a longitudinal study and uses a case study approach. It considers data collected from the ECW project and the University Blended learning project. Most of the research team worked on both projects. A series of planned evaluations both quantitative and qualitative data was obtained (see table 1 and 2). The research was carried out in a spirit of ‘collaborative inquiry’ (Heron, 1996) focusing on learning based in dialogue (Freire & Sor, 1987). This approach allowed the researchers and stakeholders to enter into an exchange of knowledge through dialogue, involving a process of reflection and action for all parties. Niglas (2004) in an evaluation of the combined use of qualitative and quantitative methods in educational research concluded that combined designs enrich the methodology of educational research. This was certainly the case in this research.

ECW project – data collection methods and sampling

The data collection for E-College Wales (ECW) project involved focus groups, questionnaires and observation. Each group was affected by the use and development of technology in learning and teaching. The total population of stakeholders were included. All stakeholders were encouraged to critically reflect on their experiences and identify the major challenges.

Table 1 - Data collection methods for ECW

Blended learning project – data collection methods and sampling

Taking the findings from the ECW project and continuing the collaborative methodological approach, the blended learning project captured data from the first year of implementation of a university wide blended learning strategy. The challenge for this project was how to encourage and implement the use of blended learning across the University. The purpose was to capture current practice and use the data collection approaches as an awareness-raising tool for the range of technologies that are available. Data was collected via focus groups with all staff engaged in the development and delivery of blended learning from various disciplines. Interviews took place with the then newly appointed Heads of Learning and Teaching and other staff engaged with pedagogy. Questionnaires were sent out to all academic staff asking them to reflect on their use of technology, their attitude to blended learning and their development needs. Table 2 summarises the main approaches taken.

Table 2 - Blended learning Data collection methods

3.0 Discussion: Weathering the storms

The discussion explores factors that created the storms in both projects and the disruptions caused.

3.1 Disruption to institutional culture

For ECW the overarching requirement for success was collaboration from different departments across the University and across the Welsh FE network had to work together. Multi-disciplinary teams were created, including staff from Academic Registry,

Learning Resources Centre, Human Resources, Marketing, Student Information Systems, Information Systems, Student Services, the partner colleges and the academic schools. The existing administrative structures hindered interdisciplinary arrangements and the boundaries between academic departments and support departments were protected by tradition and culture. This needed to change. The challenges to the university's hierarchies required senior managers to reflect on policies and procedures (Jones & O'Shea, 2004). For example, one interviewee said:

"We have discovered that customer service and support is more important than the monitoring process."

Within the University, the blurring of traditional departmental boundaries posed many challenges, especially to heads of department some of whom saw this blurring as a threat to their power. In both projects, collaborating with staff who were outside the security of shared disciplinary assumptions, have exposed staff to new ideas and approaches. As one interviewee said:

"The project has been a great gelling exercise. People have been willing to share experiences and we're all trying to work together, trying to make sure that students are supported."

Another noted that:

"The relationship between support and teaching departments has been greatly enhanced through ECW. We now understand what the role of the other departments are. So instead of an 'us' and 'them' culture we work together to find solutions."

The pedagogy and the finances of e-learning have implications for academic staff contracts. The academic's engagement with development, delivery and assessment of learning materials contrasts with the traditional model. However there was little experience of the time it takes to teach online which means that issues such as staff compensation, incentives and timetables all have to be addressed.

The ECW project necessitated a different relationship between FE partners and the University. FE staff, and colleges, took on new roles, which demanded new agreements, funding models and quality controls. These changes threatened the prevailing hierarchies and pre-conceptions about the status of FE and the collaboration models were re-examined (Connolly, Jones & Jones, 2007). As a result of technological change

universities must have more flexible boundaries between departments and in particular between academic schools and support departments.

3.2 Disruption to the tutors' roles

Tutors involved with the ECW project experienced both negative and positive aspects of technology as a disruptor. Their experiences provided a valuable platform for the future development and adoption of blended learning within the University. 'Disruption' must enhance and not comprise the learning experience. In the context of the online learning environment, there is a compelling argument that a reappraisal of the role of the tutor is required (Salmon, 2000; Jones & O'Shea, 2004) as the act and art of learning and teaching themselves change to address the new profile of the online learning environment.

The ECW project was a significant learning curve for tutors as only a minority had experienced e-learning prior to the project. 72% of the tutors felt that they had good general IT skills before becoming involved with the project. The remaining 28% saw the project as an opportunity to develop their IT skills. E-learning created new roles for tutors e.g. e-authoring and e-moderating. The nature of learners as well as their learning strategies has also changed (Stephenson, 2001). The work done with these tutors was valuable in understanding the pressures and concerns that tutors had engaging with technology.

Through our work with the tutors, it became clear that delivering in an online world presented challenges to existing practice. Although the components are essentially the same (module development; managing learning and student support), the challenges manifest themselves in slightly different ways. Draffen & Rainger (2006:65) discuss the 'concerns that arise with the use and proficiency of technologies in relation to learning activities'. Although most tutors across the network were enthusiastic about their involvement for some it was an unwelcome intervention into their teaching. Tutors took on a different role to one they were used to and felt that they did not have ultimate control

over their material. At the positive end of the spectrum, tutors welcomed the opportunity to become involved with an innovative programme, develop new skills and explore different teaching methods. One tutor summed up the positive responses:

“I recognised the potential of e-learning and want to improve IT skills. I hope to improve my competence in distance learning support, try something new, apply wide and in depth tutor experience to new context.”

In terms of progress and development, tutors had to adjust to new roles.

A potential major disruption is that technology makes tutors constantly available to students. For example, Kennoy & Seijo (2006) explore how email can both empower and constrain the academic. Anderson (2004) says e-learning breaks down boundaries and there is a greater expectation that tutors can meet their individual learning needs. Most online tutors found the online modules more time-consuming than traditional face-to-face (f2f) teaching, specifically because of the additional pastoral care and encouragement that e-learning students require. Tutors felt that e-learning students receive more one-to-one teaching time than students enrolled on traditional courses. Yet 55% of the student focus group attendees stated that the level of feedback and support from moderators fell short of their expectations. Although tutors adopted a more constructivist stance, a significant number of students expected to be taught. This may be inevitable, as a high proportion are mature students who have never studied before and therefore require additional support to complete tasks.

De Vries et al. (2005:220) acknowledge that although it is not ‘hard to incorporate technology in teaching and learning’, its adoption does not always lead to the most effective practices. As Falconer & Littlejohn (2007:42) stress:

“The technologies that might enable teachers to meet these various needs are developing and changing rapidly....teachers receive little guidance on how to use these tools to best effect.”

The main ‘disruptors’ for tutors were:

- Technology alone does not automatically transform a traditionally delivered course into an online course. Tutors need to re-think their approaches and

methods. Even though a module works well in a f2f environment, it does not guarantee success in an online environment.

- Both opportunity and encouragement must be provided for tutors to reflect not only on course content but, also pedagogy, assessment and the role of technology.
- Tutors should develop a good understanding of the technological affordances, integrating them into the pedagogical model employed.

The final point illustrates the convergence of Christensen's (2000) disruptive and sustaining technology. If we follow the storm analogy, at the end of the project tutors may have felt 'over the worst' but it can also be argued that we are still at the eye of the storm. In a technological world, we must be vigilant to new developments and take advantage of them when appropriate.

3.3 E-learning's disruption to students

Laurillard (2004:72) makes a bold statement that 'students are comfortable with e-learning methods, as they are similar to the forms of information search and communications methods they use in other parts of their lives.' While this might be accurate if all students are 'digital natives' (Prensky, 2001), 80% of the ECW students were from the 25-49 age group representing the non-traditional learners. They were less comfortable with technologies and would fit into Prensky's (2001) view of digital immigrants rather than digital natives. Many of these students found e-learning intensified the challenges and disruptions they faced with re-entering formal education after sometime. However, as the start of this paper states, disruption can have both positive and negative outcomes. This section of the paper looks at some of the negative disruptions, which created a storm in students' learning experience.

The majority of students, like the tutors, had little previous e-learning experience. Anderson (2002:8) stresses, these students often have a 'deeply ingrained models of in person peer groups, teacher directedness and paced delivery and evaluation.' The unfamiliar online learning environment that challenges the 'ingrained model' require a fundamental shift in learning styles. Regan (2003:81) describes the 'ultimate disorienting

dilemma' where the familiar frameworks and markets of everyday life and learning no longer exist, or at least exist in unfamiliar forms.' As one of the students commented:

"This is (ECW course) very different! I feel deep down in my brain the school days still and you know, I mean in the 50's and 60's school days."

Another student commented:

"I do enjoy this new found freedom, but it is at a price in not having classroom type support...although the discussion board helped a bit, it is just not quite the same to be able to talk to someone in a classroom at a fixed time."

According to Palloff & Pratt (2003), one of the first and obvious disruptions to students existing mode of learning could come from their relationship with technology. Although it could be argued, students who applied for an e-learning course should know that they need to be technical competent, but students either underestimated or overestimated their own technical skills. This mismatch in their technical skills created feelings of anxiety. The course was constructed in a Virtual Learning Environment (VLE) and a high level of online participations on discussion boards was required. Students' lack of technical skills during the course was de-motivating, affecting their confidence and led to retention problems. To minimise this disruption, the project carried out an ICT assessment of students before they enrolled, provided ICT training and importantly a f2f three day induction on being an e-learner. Dickey (2004) highlights, it is important to recognise that technology can alienate and frustrate users who feel disenfranchised or marginalised by the use of technology. Social skills are also of concern in relation to the use of VLE in e-learning (Ramsey, 2003). Ng (2001) discovered that e-learners reported considerable anxiety at communicating electronically, realising that this form of communication required new social and communication skills. In addition, the VLE also is seen by some students as a transparent place where they feel intimidated posting their ideas for 'everyone to judge.'

The online environment with its rich and extensive resources, its unstructured nature and huge collaborative opportunities can create more disruption, as students are required to

take more responsibility for their own learning and be self directed, reflective learners (Palloff & Pratt 2003; Macdonald, 2006). Conrad and Donaldson (2004) assert that adult learners were typically educated in a more teacher centred environment previously and they tend to be more comfortable in a passive role. These students required induction into the expectations of being an e-learner. This is evident in some of the students' comments where they found the availability of extensive resources an advantage, but their lack of ICT and research skills overwhelmed them. In addition, time management was stated as one of the top challenges they faced during their study.

The intense use of online interactions and collaboration in an attempt to create a community of inquiry, created further disruption to the students. The community supported students to become more independent and reflective. The shift from a real-time f2f mode of communication to an asynchronous text-based means of communication is often challenging for many students (Garrison & Anderson, 2003). This is the case with many students who commented that while they found the discussion boards acceptable, they found the lack of human contact created 'loneliness and isolation'. Many students stated that they felt 'lonely' studying online. One student commented:

"The course is a flexible way to study but I feel lonely sometimes. Motivation is key to success but managing time is a huge challenge for me given my other responsibility at home and at work."

Students commented that although the project created many support channels such as a customer support centre that provided out of office hours support via email, telephone and discussion boards, which were excellent, but they did not see these contacts as 'real' contacts. Indeed, many students organised their own meetings and requested f2f sessions on campus. However, students often failed to attend as their work or family commitments took precedence. This dilemma of wanting f2f support and their inability to take part created more disruption.

The greater need for collaboration with peers was not a concern for all students; Some students preferred to work on their own. One student commented:

"I had little interest in the social element of the course, I am not interested in communicating online with others, I just want to gain my qualifications."

Another student said:

“I liked the isolation, as I dealt with people all day (at work) and I found it restful to work in isolation at night.”

The constant reminder to participate in online discussion by the tutors was a disruption to their own study pattern. They enjoyed working in their own time rather than participating in discussions.

To summarise, the level of potential disruption would differ depending on learners’ technological competence, attitudes, openness to learn in a new environment and their learning preferences. The additional pastoral care and encouragement from tutors are vital for students to turn these disruptions into positive outcomes. Students reported the acquisition of ICT, research, business and management skills; increased self-confidence; gaining new learning experience; making business network which in turn assisted many to promotions and expansion in their own businesses.

Key lessons had been learned by all the stakeholders and this knowledge was used to implement blended learning within the University. With all this knowledge and experience, was the storm over?

3.4 Blended learning – at the eye of the storm?

Blended learning, in particularly HE, is now widely adopted and growing vastly around the world (Elsner, 2006; Johnson & Tang 2005; Jung & Suzuki, 2006; Kaur & Ahmed, 2006; Otte, 2005; Salmon & Lawless, 2006; Ziegler et al., 2006). It represents a real opportunity to create learning experiences that integrate the innovative and technological advances offered by online learning with the interaction offered in the best of traditional learning (Thorne, 2003). The ECW project indicated that the most effective delivery for technology-supported learning is a blended delivery model with online study complemented by f2f meetings. Following four years of the e-intensive ECW project, the UoG made a commitment in 2005 to adopt blended learning across the institution:

“Glamorgan is ... committed to the delivery of a first class learning environment incorporating the highest standard of e-learning, tutor facilitation and use of cutting edge learning facilities.”

Given this vision, the university is striving to improve the excellence in learning and teaching and blended learning is one of the change agents. A three-year project to embed blended learning across the University's provision was led by the Head of Centre for Excellence for Learning and Teaching (CELT). The objectives were (1) to provide the learning environment where all students can experience technology enhance learning and assessment; (2) to enable the academic to enhance their teaching experiences - delivery and assessment by staff undertaking training, design and development in the use of technology. A continuum of blended learning used by UoG is shown in figure 1.

Figure 1 Continuum of Blended Learning (Jones, 2006)

Hanson & Clem (2006) argue that there is neither a simple stage-like model nor any standard methods to design and to implement blended learning. The practices of blended learning are tailored by different needs and requirements of individual organisations.

Thus, Jones (2006) suggests that the Continuum of Blended Learning is a guideline instead of stage-like model for the institution to incorporate learning and teaching mediated by technology. The Continuum identifies that PowerPoint presentations, basic web-facilitated resources through VLE (teaching materials and announcements) are the indications of the 'Basic ICT Usage' and 'E-enhanced' category. The next point is 'E-focused' where discussion boards, online assessment tests and interactive materials take place. More online facilities are used extensively and creatively here. E-intensive is the last category in the continuum, where whole teaching and learning is delivered online with f2f inductions. This continuum is designed to identify blended learning initiatives and reflections of teaching practices rather than to assess or evaluate them.

This continuum supports Garrison and Vaughan's (2008) view, which rejects the dualistic thinking of choosing between conventional f2f and online learning. They feel that a continuum provides more room for the practitioners to decide which point is best for the individual's epistemology and discipline. The ability of self-evaluation and the direction ahead are well defined for anyone who adopts this model. The 'E-intensive' point,

however, is not necessarily the best option. It should be subject dependent and flexible. The continuum provides a clear practical model to any institution that is new to blended learning.

3.5 Institutional enhancement

What impact has the project had on the University? Table 3 summarises the major changes across the university and how they have been implemented and highlights blended learning innovations across the institution that successfully engaged academics and students.

Table 3 The institutional enhancement

All faculties have most of their modules aligned with one of these points on the continuum (Jones, 2006). The establishment of the multi-disciplinary teams including CELT, Blended Learning Team and e-Support Team who provide advice and support on blended learning practice. A recent UoG survey (2007) of academics reveals more than 86% of the staff are aware of the VC's vision.

The qualitative findings of this research show that a positive engagement is being achieved with academic schools, especially through the creation of the Head of Learning and Teaching and Blended Learning Champions as the voice of the faculty. They have enabled good practice to flow between faculties and within faculties. The level of positive engagement, however, varies from one discipline to another. The 2007 survey reveals that the majority of course material can be accessed in Blackboard. Staff are encouraged and supported to work on integrating technology into their learning and teaching. For example, the blended learning and blackboard administrators provide support and assistance to academics. CELT offers Innovation Project Grants, which are awarded annually to projects, which contribute innovatively to learning and teaching at Glamorgan. Monthly Seminars, Blended Learning Road Shows and CELT website (CELT, 2006) have successfully raised the awareness of the blended learning implementation across the institution.

There have been a number of leading edge developments including interactive workbooks, computer-aided assessment, simulations and game-based learning, hand held electronic voting and the use of weblogs and wikis as part of critical reflection. In addition, a range of projects have been delivered:

- Digital Repository – providing Reusable Learning Objects.
- Postgraduate Dissertation Support – providing whole institutional interactive support for students who are often studying at a distance.
- Talis List – creating reading lists which interact directly with learning resources through OPAC or online journals.
- Electronic support for personal development planning and student portfolios.
- Building the diversity and disability agenda into learning design.
- Review of online assessment, feedback and marking tools.
- Simulation/Games in learning and teaching.

Most of the above developments enhance the learning and teaching with a range of attractive, interactive and engaging approaches. Academics' responses to the initiatives have been evaluated and they feel that the developments added value to the learning and teaching experiences across the institution:

"I have used Blackboard as support material and engaging dialogue with students. I found that very helpful."

"I am quite excited about the prospect to be able to use Questionmark Perception...I would like to be able to use something like that to give students formative feedback and summative feedback as well...I am quite interested in the technology that can be interactive."

"...everything is organised!"

3.6 New storms on the horizon

Apart from these significant successes, the findings include several challenges and there are new storms brewing.

3.6.1 Challenges from academic perspectives

From our interviews, the fear of the academics' changing role commonly arises. They are afraid of the 'new' role 'disrupted' by innovative technologies. Thus, there is a need to show academics that educational technologies are one of the drivers, not the 'sole' agent for change, for learning and teaching. Learning and teaching remain the focus and good teaching is not platform dependant. An experienced academic clearly asserts this view:

"We have a very firmly view, that if you are a good tutor offline and you would be a good tutor online...you are a good tutor means you are a good tutor whatever the medium is."

General assumptions from the academics felt that the project was about technology and not pedagogy. The time involved in replying to emails, using discussion boards, participating in social networking and other educational technologies is assumed as 'disruption' to the traditional teaching practice. Conversely, there are contrasting views, which reveal that the effective and efficient communication is seen as a key benefit for blended learning. The need for upfront development, however, takes time and this is still a core challenge for blended learning. Many academics find little time neither to explore educational technologies nor to redesign the delivery mode and method. As a summary, individuals' passion for education underpinned by educational theories is the main driver to over triumph the time constraint.

Once one module on a course is delivered in blended manner, students expect it for all modules. The flexibility of access to course materials and resources is highly valued:

"I think that would be very useful from the students' perspective. They used to one medium, they know where things are, they know where the module description is going to be located, or staff details."

Many academics and students value the experience of blended learning and such experience can influence other lecturers to deliver the course in blended manner – a demand led enhancement. The University has made a start to refocus the learning and teaching with educational technologies agenda across the institution as addressed by the following academic:

"I think it's very exciting. It's very exciting because the university was taking the opportunity not just to change in technology enhancement but to change the learning and teaching. And using blended learning,

like the Trojan horse... get people thinking about blended learning, and get them to start talking about all of the ways they do learning and teaching, not just as the technology enhancement.....it's something which is quite new to the culture in the University of Glamorgan."

"...and blended learning has allowed people to actually say, "No I am not going to use this technology because I believe my current teaching practice is better and why it is better. As long as we achieve that kind of personal reflections, and we get people to engage with blended learning, this is exciting for the university and also exciting for me."

3.6.2 Challenges to organisational culture

"...But if you look at the people attending our seminar are the same groups of people you know, you are only preaching to the converted group" ~ Academic

The above comment highlights a major concern when embedding blended learning practice across the University. One approach is to use a 'funnel' model to promote an institutional wide culture by initially focusing on a small interested group and gradually engaging a wider group.. The message must find a way to penetrate outside the small group of 'converted' staff. The challenge is how to engage more academics in staff development opportunities, rather than merely preach to the 'converted group'. Another challenge is not all staff has competence technical skills, or knows who to ask when problems arise during the development of electronic course content. Issues such as providing blended learning technologists in each faculty are yet to be resolved. There is one critical response from an academic:

"I think you got to sort out this resource...there must be some sense of resources available; the university should either bite the bullet and pay for it, or forget all about this!"

The requirements from faculties are complex and diverse due to disciplinary differences. This results in multifaceted support and development needs. Each faculty are expected to embed blended learning into their learning and teaching strategy. However the credibility gap between idealism and reality needs more time and resources to accomplish this.

4.0 Conclusion: ‘over the worst or at the eye of the storm?’

Storms are unavoidable but learning to recognise, manage and harness them is possible. The ECW project and Blended Learning project generated challenges that forced us to look at the most effective ways to engage staff and students in a changing learning and teaching environment. According to Christensen (2000) disruptive technology is new whilst sustaining technology involves incremental improvements to existing adaptation. As discussed in the above arguments, this project has moved from a primarily disruptive environment to a blended environment that seeks to embrace disruptive and sustaining technology where appropriate. It may be a disrupting and destructive storm if the ‘e’ or technology is the only focus and sole agent for change. We would argue that the sustaining and constructive way of transforming learning and teaching is through blended learning, not e-learning alone.

The overall conclusion from Christensen’s analysis (2000) is that it is extremely difficult for established organisations to adopt and embrace disruptive technologies. A small number of organisations manage it, but a much larger number fail in the attempt. In our research hitherto, we concur with the conclusions of Connolly, Jones and Turner (2006:47):

“If e-learning is a disruptive technology, then the next two decades will require a dramatic restructuring of HE. We would prefer to see a planned transition in which universities planned to learn how to implement e-learning, than to wait for universities to be put out of business by new organisations that have been quicker to understand what e-learning can be used for.”

This paper recognises Glamorgan’s experience to provide insights which can be compared and contrasted with the experiences in other institutions to inform others who are attempting this development. This longitudinal study captures a journey that started in 2001 and reports on the way in which a blended learning strategy challenges the academics, students, management and culture of universities.

Blended learning does make a difference to the learning and teaching experience, how big a difference will be continually evaluated. Watch this space, as we decide whether we are truly over the worst or still at the eye of the storm.

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