# Learning from the past: TEL implementation 1997 and 2007

Stephen Brown

Knowledge Media Design, De Montfort University, UK
sbrown@dmu.ac.uk

**Abstract.** This paper argues that the key challenges facing HE institutions in 2007 are the same as a decade previously and therefore that lessons may be learned from previous attempts to employ Technology Enhanced Learning to meet these challenges. It describes an institution-wide blended e-learning initiative, analyses its successes and failures and comments on how the environment has changed and how this is would make a difference to the strategy reported here. It concludes that a blend of top down and bottom up approaches is likely to be most successful and notes that Web 2.0 tools make both approaches more attractive to their respective stakeholders. Bottom up ensures popular support and quick gains, but top down is essential for long term sustainability.

**Keywords:** Technology enhanced learning, TEL, e-Campus, blended learning, change management, quality assurance, embedding, VLE, MLE, institutional strategy.

## 1 Introduction

Higher Education is under considerable pressure to change. According to the authors of the 2007 Horizon Report [1]:

"The environment of higher education is changing rapidly. Costs are rising, budgets are shrinking, and the demand for new services is growing. Student enrolments are declining. There is an increasing need for distance education, with pressure coming not only from non-traditional students seeking flexible options, but from administrative directives to cut costs. The "shape" of the average student is changing too; more students are working and commuting than ever before, and the residential, full-time student is not necessarily the model for today's typical student. Higher education faces competition from the for-profit educational sector and an increasing demand by students for instant access and interactive experiences."

They conclude that "there is a profound need for leadership at the highest levels of the academy that can see the opportunities in these shifts and carry them forward" [1]. But how new are these challenges and what lessons can senior managers learn from the past about how to implement Technology Enhanced Learning (TEL) at an

institutional level? This paper argues that the current trends in higher education were apparent a decade ago and that important lessons can still be learned from early attempts to meet these challenges through the deployment of TEL.

## 2   A little history

In the UK, between 1989/90 and 1999/2000, per capita spending on full time equivalent HE students declined by nearly 40 per cent [2] and there was a 57% increase in numbers of students as a direct result of government policies [3]. These extra students were increasingly drawn from non-traditional backgrounds, bringing different skills, experiences and expectations, they were increasingly likely to be working at least part time and needed therefore much more flexible and individualised learning support.

At the same time, the sector was facing the threat of shrinking overseas market opportunities as countries such as Australia and the USA sought to increase their market share of overseas students and as countries such as India, Singapore, Malaysia, Hong Kong, Indonesia and South Africa were expanding and enhancing their own local provision. Further competitive threat was perceived from newly emerging "mega-universities" with global aspirations [4] and commercial companies attracted by the enormous revenue potential of a market estimated at US$256.6 Billion in the US alone in 1999 [5]. Other new entrants to the rapidly growing world learning markets were corporations such as Quatas Airlines, South Africa Telecom, Unipart, British Aerospace, MacDonalds, IBM, PeopleSoft, Disney, Motorola, and Daimler Benz which were moving to offering in-house staff development through their own 'Corporate University'. Motorola estimated that it had 100,000 students of whom over 20 per cent came from outside the company [6]. Expansion in the corporate sector was rapid. In 1990 there were about 500 corporate universities in the USA. By 1998 there were more than 2,500 [7]. At the height of the dotcom boom figures like these fuelled dramatic forecasts such as Allan Barnes, Director, the Education Counselling Service of the British Council: "In the future we might see the News International or FT university with an in-country presence where they are delivering content from a few brand name players." [8]. Such views were not without foundation. Revenues at commercial provider Ziff Davis' online learning unit more than tripled in 1999, with the number of paying customers rising from 40,000 to 352,000 [9]. Phoenix University ([www.uophx.edu/online](www.uophx.edu/online)), which already had 75,000 students on 119 campuses over 34 states, opened a European campus in Rotterdam in October 1999 it and announced plans to expand further into Germany, Spain and Ireland. It was estimated that private education was growing 20,000 per cent faster than public education [10].

We can see therefore that the challenges described by the New Media Consortium are not new. They duplicate closely the conditions already evident a decade earlier. So, if the conditions now are so similar, it may be that by examining earlier responses to these challenges, useful lessons can be learned. In this paper we examine a case study in change management at a UK university.

Like many institutions at the time, De Montfort University, Leicester, responded to these combined pressures of reduced funding, increased student numbers, greater variability of students and stronger external competition by expanding rapidly to establish significant market share. Between 1984 and 2001, Leicester Polytechnic, as it then was, merged with four other HE and FE institutions to become a distributed university with 10 campuses spread over central, eastern England, over 100 miles (160km) between its farthest points. Student numbers grew from 8,000 in 1984 to 32,000 in 2001.

Such rapid expansion generated a need for new solutions to teaching and learning and a number of separate, but related, pilot experiments in network based learning delivery and support systems were attempted. Individually these projects explored different aspects of online and hybrid learning such as synchronous and asynchronous communications, computer mediated study, computer assisted assessment, multimedia and Web based resources including learning materials, online journals and books and image archives. However, they did not have a single owner so they could not readily share resources and experiences. They were isolated from each other and largely disconnected from key related issues such as staff development, network investment and overall course planning. At times there were incompatibilities and even conflicts between the different approaches as different champions struggled to expand their field of operations and secure additional resources. Like many independent, isolated initiatives of this kind, their overall impact was slight [11].

It was against this background of recurrent initiative, development and decline that a top level strategic decision was taken in 1997 to establish a centrally managed, university wide project, to provide students in all faculties and at all levels of study with access to World Wide Web based learning materials plus email and conferencing learning support systems through a single new virtual learning environment [12]. The aspiration was that, because it was centrally driven and co-ordinated, this "e-Campus" initiative would become self sustaining where others had faded away.

## 3   Phase 1: A managed experiment

The e-Campus was an early attempt to deliver what has become known as blended learning [13]. It aimed to make it easier for students of all kinds to study by using TEL to remove some of the constraints on time and place of study such as fixed attendance at lectures, limited opening hours for buildings, communication via notice boards, face to face meetings, seminars and tutorials, while retaining the benefits of on-campus student life. The original plan was to develop learning materials and activities to complement existing teaching through a combination of:

- In-house development.
- Embedding of materials developed elsewhere.
- Collaboration with other organisations to jointly develop new materials.

However, issues around the costs of reviewing, licensing, modifying, distributing and installing software packages produced elsewhere [14] meant that, in practice, most of the e-Campus materials were produced *ab initio* and without the involvement of outside parties.

Five guiding principles were adopted:

- A common delivery environment.
- Simple, readily available tools for authoring, assessment and communication.
- Central media production resources.
- Central funding and project monitoring.
- Local project management.

The Web was chosen as the common delivery environment because its cross platform independence offered the potential of a virtually universal delivery capability. Focussing on HTML as the primary medium for delivery and support helped to simplify the decision making and development process. The choice of a single medium set priorities for infrastructure investment, software tools and staff development and defined useful parameters for functionality. While all this seems obvious in 2007 it should be remembered that in 1997 the Web was only 3 years old and not necessarily an obvious choice.

Staff were encouraged to author materials using readily available, basic, development tools, (mainly Microsoft products), although some flexibility was retained to allow for variations in requirements and to avoid the dangers associated with dependence on a single product or supplier.

Central support units including educational technologists, graphic designers, programmers, IT trainers, printers, photographers and video production specialists were reconfigured to provide a seamless "one-stop-shop" support service to Faculty staff engaged on e-Campus projects. The result was a combination of highly specialised but necessarily limited central resources and less skilled but more readily available Faculty based resources.

It was recognized that additional funds make it easier for line managers to sanction staff involvement. Faculties could bid for project funds against explicit criteria. Funding for the initiative was provided centrally and central control over project budgets was retained to allow close monitoring of expenditure against agreed schedules and targets. Central financial control also made it easier to buy in resources for sharing across projects, eg. Software site licenses.

Although the e-Campus initiative was centrally managed, individual projects were based in Faculties and content development was undertaken by Faculty staff, with central support as required. Support was provided by the newly created Department of Learning Technologies, with institution-wide responsibility for educational technology development, including learning and teaching strategies, graphic design, video, photography, educational software development and IT training. Each Faculty was allocated an individual educational technologist from this team to work closely with them to develop specific proposals for e-Campus funding. These individuals were given the title of Learning Development Managers (LDMs). Once e-Campus projects were underway the LDMs worked with their faculty colleagues to help them:

- Develop appropriate teaching, learning and assessment strategies.
- Identify and, if appropriate, obtain resource based learning materials produced elsewhere.
- Develop teaching and learning materials and activities.
- Identify and meet staff development needs in relation to implementation of the Electronic Campus.
- Access the central team's production resources (graphic design, courseware authoring, programming, desk top publishing, audio, video and photography, digitisation, printing, etc.).

Progress was monitored at fortnightly LDM meetings to determine where additional support or remedial action might be necessary. The LDMs were assisted by a working group, drawn from across the university and including Faculty and central service unit representatives. The role of this pan-institutional working group was to establish the interworking necessary to ensure that e-Campus developments were not restricted by traditional departmental barriers. Overall e-Campus policy was determined by a high level policy and strategy committee chaired by the Pro Vice Chancellor for Learning and Teaching. This committee included senior managers such as the Director of Learning Development, the Director of Information Services and Systems and the Dean of Computing. Thus the policy committee set policy in the context of wider university strategy, the LDMs advised on policy through the head of Learning Technologies and they also implemented policy, aided by the pan-institutional working group.

In the first 22 months over 30 different e-Campus development projects were established, ranging across all Faculties and at all levels including further education, undergraduate, postgraduate and continuing professional development. Some of the projects aimed to produce a complete set of course resources, some were just a single module and others were just component parts of modules. In most cases successful project bids were based on resources already developed in the university and in areas most likely to have maximum impact on students and staff. The learning activities included lectures, seminars, tutorials, laboratory experiments, practical assignments and cognitive assessments. These took various forms including pdf documents, HTML pages, web interfaced databases and on-line assessment exercises, plus on-line computer conferencing, videoconferencing, e-mail and synchronous 'chat'. Students started to study the first of these modules during the first semester of 1998 and by 2000 the total number of students studying on-line to some extent was over 3000.


## 4  How well did it work?

A variety of formative and summative instruments were employed to gather useful feedback about the e-Campus project, including student pre module questionnaires to capture student profile data, attitudes and expectations, post module questionnaires and focus groups to gather feedback and module assignment scores to obtain

objective measures of performance. Staff were interviewed to ascertain their expectations and actual experiences of developing, delivering and supporting TEL. Early formative findings were fed back into the development process while summative results were collated to provide an overall picture of the impact of the Electronic Campus initiative [15]

In keeping with many similar studies, there was no significant difference between e-Campus module student assessment results and traditional modules [16]. The overall impression created by the more subjective feedback was that generally students were positively disposed towards electronic learning. They had positive expectations in advance and they subsequently reported that their experiences had been positive in terms ease of use, interest and quality. This is not to say that there were not also negative responses. For example some modules were criticised for not being interesting or useful enough. These criticisms were generally leveled at modules that published online non-interactive materials such as lecture notes, assignments and administrative materials. (a common problem at the time [17]). Another finding was that when material was designed to be interactive, many students did not have the necessary skills to use it effectively. Computer logs and follow-up interviews revealed that many students found it difficult to manage their time effectively when offered a more autonomous learning environment, stripped of the reminders found informally in face-to-face teaching [18]. However, the most problematic aspect was access: "Across the Electronic Campus project staff made what seemed at first sight to be good provision for student access. However, students did not find access easy." [15]. The main reasons for this were insufficient numbers of machines available at convenient times and in suitable environments. Given the integrative aspirations of the e-Campus it is interesting to note that the independent evaluators observed that "Improving the situation ….. demands an integrated approach to university development." [15]. We can see here an early indication that the e-Campus was less well integrated into mainstream than intended.

On the whole, staff were less favourably disposed to begin with, voicing concerns about the use of ICT similar to those reported elsewhere [19] [20]. These included inadequate skills and lack of understanding of how new technology could underpin sound pedagogy. As staff became more involved their initial fears diminished and were replaced by concerns about the amount of time it took to develop good quality learning materials [21]. We found that staff who were initially cautious about on-line teaching, once engaged became enthusiastically committed to the point where the amount of time they contributed greatly exceeded that devoted to development and delivery of face-to-face teaching.

## 5   Lessons learned

**What worked**

Central purchasing of strategic resources to support activities over several projects and faculties, e.g. Software site licenses and staff training courses.

Maintaining central control over project budgets enabled close monitoring of expenditure against agreed schedules and deliverables, which helped to ensure the overall outcome of the project was a success. Without this degree of central monitoring and control it seems likely that more of the projects would have failed to meet their targets.

Basing projects in Faculties ensured local ownership and relevance. This helped to maintain and commitment and enthusiasm for the projects during development and provided a receptive environment for adoption when the projects were complete.

Establishing a one-to-one relationship between Learning Development Managers and Faculties allowed the central support services to work more strategically and pro-actively with Faculties than had been evident hitherto.

Using the World Wide Web as the primary teaching delivery and learner support medium helped to improve the efficiency of the design and production process by simplifying decision making and focusing development resources. The choice of medium set priorities for infrastructure investment, software tools and staff development and set parameters for learning activities.

Concentrating on readily available, familiar, development tools ensured that all staff had easy access to them and, where necessary, to in-house training courses.

Providing highly skilled technical support resources for course design and production ensured that e-Campus products were not constrained by the limited technical skills of most teaching staff.

**What didn't work**

Although central funds made it easier for Faculty staff to get involved (78% of the project money allocated to Faculties was used to buy out staff time), it was still difficult to release them from other duties. Faculty staff taking a lead in the e-Campus project were typically heavily committed to other key activities as well, such as student recruitment, research, university consultancy, administration, etc. It was difficult for such people to allocate as much time to e-Campus projects as they themselves would have liked [21]. Other, complementary, changes needed to be put in place not only to facilitate but to actually reward staff for contributions.

The bidding process was not as transparent as it should have been. Political pressure was brought to bear to ensure that some units received funds despite poor or

non existent bids. In the event these units did not deliver satisfactory products and (or because) they did not engage with the LDMs.

The balance between central and local management was difficult to maintain in some cases. Heads of department resented weekly scrutiny of progress and seemed unconcerned if project funds were unused or used for different purposes.

Visibility was an issue. In the days before ubiquitous university web sites it was difficult to tell everyone in the university about the e-Campus: what it was, why it was important, how it was progressing. Despite articles in staff newsletters, emails, staff meetings and an exhibition that traveled around the university, the profile of the e-Campus was not as high as it could have been.

Integration of the e-Campus into core business was less successful than initially intended. Despite the presence of the e-Campus working party there were insufficient access points across the campus to support peak loading around assessment deadlines.

## 6  Phase 2: Embedding

While the first phase of the e-Campus achieved some quick gains, in hindsight it was seen to have contained the seeds of its own limitations. Innovations of this kind frequently fade away because they are not taken on board by the whole organisation and the individuals associated with them move on to other activities [11]. So, having transformed electronic delivery and learning support from a raft of localised, uncoordinated, separate initiatives into a single co-ordinated programme, the next challenge was to convert it to 'business as usual' by embedding it in established mainstream activities.

Five key areas were targeted:

1. Faculty strategic planning
2. Quality assurance
3. Staff rewards
4. Staff development
5. Integration with mainstream systems

### 1 Faculty strategic plans

The single, most important, idea was to find a way to encourage Faculties to build TEL into their strategic thinking. Each faculty was asked to develop, resource and implement an annual strategic development plan for learning and teaching as part of their overall annual business plan. This plan was to integrate teaching, research and revenue generation goals in the context of the university strategic plan which, *inter alia,* stressed the importance of flexibility of provision and the key role of new technologies. A change management process was devised, beginning with a briefing

at a senior staff away day attended by the Vice Chancellor, PVCs, Deans and Heads of Departments, followed by meetings with Deans individually to negotiate details of the process within their faculty, then meetings with their senior staff to establish priorities and agree actions. Full faculty meetings were included in the plan to allow all faculty staff to participate. Workshops were scheduled to work with subsets of faculty staff to develop the strategic plan. The first draft was to have a formative role, allowing widespread review and sharing of ideas. A crucial feature of this planning process was that second draft faculty plans would be reviewed to assess their impact on central university functions such as networking, campus opening hours, catering services, etc. and the results used to modify both central and faculty plans to ensure optimum integration and allocation of resources.

## 2 Quality Assurance

All new modules or course proposals are subject to University Quality Assurance procedures. At De Montfort these procedures were rewritten to ensure that proposals for new or revised modules and courses arising from faculty strategic plans took account of TEL possibilities. LDMs were formally built into the development process at key stages to ensure that faculty based staff had the benefit of professional advice and guidance when considering educational technology issues such as teaching methods, assessment strategies, learning support methods, learning and teaching resource requirements and possibilities, media production and acquisition methods and staff development possibilities. For the first time approval of new or revised modules and courses would require the approval of someone with an educational technology perspective as well as those responsible for physical resources and academic content.

## 3 Staff Rewards

At the time, university institutional structures did not generally encourage efforts to change and improve teaching [22]. De Montfort University was no exception. Promotion was based largely on excellence in research. Phase 1 of the e-Campus demonstrated that buying out staff time and providing skilled support were necessary, but not sufficient conditions for ensuring pedagogical innovation. More positive encouragement was required. Accordingly, a Teacher Fellowship scheme was proposed to formally recognise and reward innovation and excellence in teaching. Teacher Fellows were to have the same academic status as Readers in the University but their role was to encourage good practice in learning and teaching and act as champions for change. They would be appointed for 5 years and given a development fund to facilitate new learning and teaching initiatives within their faculty, to disseminate ideas and to support colleagues in developing their teaching roles.

**4 Staff development**

At the time, institutions developing on-line teaching commonly paid little attention to the importance of staff retraining and development [17]. Yet the Web was still a relatively new development and most HE staff had only limited appreciation of how to use it effectively for teaching and learning [23]. The idea that in an interactive on-line learning environment the role of the teacher changes from provider of knowledge to facilitator of learning was relatively new [24] [25] and TEL activities were being bolted on to the curriculum rather than thoughtfully included in ways which fully considered pedagogical needs [20]. To overcome these problems, Faculty staff working on e-Campus projects were offered a combination of formal training events and informal on the job support. The formal programme covered basic technical authoring skills using Microsoft Office products plus HTML authoring, web site development and management, Internet communications and information searching techniques. Project teams were also offered short courses on the use of specific software tools for use within the e-Campus such as First Class, WebCT and QuestionMark. Informal development took place through interaction with the LDMs, beginning with discussion of the project proposal proforma which encouraged teaching staff to consider learning objectives, pre-requisites, relationship with other courses, assessment strategies, teaching methods, learner characteristics and requirements, media capabilities, etc.

**5 Integration with mainstream systems**

To raise the profile of the e-Campus and to reduce the amount of overhead created by duplication of information and processes, it was proposed to integrate the virtual learning environment of the e-Campus with other student-facing and back-office University information systems such as student records, finance, libraries, accommodation services, to create a seamless "Managed Learning Environment". A Managed Learning Environment includes the whole range of information systems and processes of an institution (including its virtual learning environment) that contribute directly, or indirectly, to learning and the management of that learning [26]. The author bid successfully to the UK Joint Information Systems Committee (JISC) to secure £250,000 for a pilot MLE implementation based on the e-Campus.

## 7  How well did it work?

These planned changes coincided with promotion to the position of Vice Chancellor of the Pro Vice Chancellor who had been overseeing e-Campus developments. Major organisational changes followed, in particular a decision to consolidate most of the university activity on the primary Leicester City site and dispose of the other campuses.

Against this backdrop a decision had to be taken as to how to resource further e-Campus developments. It had reached the point where further expansion of the project would have required major increases in the central team and e-Campus budget. This option seemed to contradict the notion of embedding e-Campus principles in business as usual. So instead it was decided at the highest level in the institution to encourage Faculties to take on full responsibility for further development by withdrawing central support for the e-Campus. The belief was that while the ring-fenced e-Campus project development budget was available, Faculty strategic plans would not allocate appropriate resources and while the central support team was driving innovation, the majority of Faculty staff would not feel it was necessary to take a lead. Accordingly the e-Campus budget was terminated and the central support team of Learning Development Managers, programmers, graphic designers, desk top publishers, etc. was disbanded. Some staff were dispersed to other units, others accepted redundancy terms.

In practice this strategy cannot be said to have been entirely successful. Without support for it, the process for developing and monitoring Faculty strategic development plans was not implemented and so this cornerstone of the embedding process did not materialise. Neither were the revised Quality Assurance procedures implemented. These were overtaken by the departure of the Learning Development Managers. Teacher Fellows were appointed, but with only limited funds compared with e-Campus budgets, no central support team and often very little technical expertise, their impact has been limited. E-learning development has continued but at a much more modest level. Most of the course materials available online at De Montfort University are non interactive course notes and administrative materials such as student handbooks, assessments and timetables, ie. the kinds of materials the phase 1 evaluation identified as least valued by students.

## 8 Conclusions

The e-Campus project was successful, up to a point. It generated a large quantity of innovative blended TEL in a short period of time, across all faculties in the university and at all levels from sub-degree courses, through undergraduate to postgraduate. By 2000 De Montfort University was cited as one of only five UK universities with significant expertise in distance education (the others were the Open University, the University of London External Programme, Heriot-Watt and Aston at Birmingham) [27]. But, as a consequence of the way it was established as a top down, ring fenced, activity separate from mainstream university processes it remained marginal and vulnerable to changes in the organisational environment at the moment when significant additional investment was required to embed it into the mainstream structures and processes of the institution. Migration from face to face teaching methods to more TEL delivery and support is more than just a technical challenge; it requires a culture change, which is much harder to achieve, particularly in the democratic environment of a university. "Most HEIs are still struggling to engage a significant percentage of students and staff in e-learning, and real development

beyond projects by innovators has so far been modest.." [28]. A successful strategy will address both content and the process of obtaining commitment [4] and in this case there was not sufficient popular support and ownership to resist the new Vice Chancellor's decision to discontinue funding. On the other hand, bottom up approaches tend to founder on the rocks of competing policies and priorities of different parts of the institution and a ring fenced project is a good strategy to establish rapid results and momentum in the short term [29].

Reflecting on these conclusions, 4 main themes seem to emerge:

- Management issues
- Popular support
- Support infrastructure
- Embedding

Management issues concern the strategic fit between TEL developments and high level institutional goals; cost-benefits; performance measures and evaluation. Popular support encompasses staff concerns, awareness, benefits and rewards; Support infrastructure includes technical support, tools, training and pedagogical advice as well as physical networks; Embedding refers to institutional quality assurance (QA) procedures, course planning and budget allocation.

**What has changed and what would we do differently now?**

The most vulnerable link in the e-Campus development chain was the large, in-house multi-professional production team. This team played a crucial role by ensuring that faculty with limited technical and information design skills could still produce well designed, professional quality multimedia. While not all e-Campus modules entailed animations, video, virtual reality simulations, etc. such elements were produced as required to ensure that pedagogical needs were not constrained by lack of technical expertise. The costs of running such a support team were high and increased in direct proportion to increasing demand for their services. They were simultaneously a potential limiting factor on increased expansion and a significant potential saving if they could be dispensed with. Without their presence the role of the LDMs was untenable.

Since then, easy to use, low cost, professional level web based multimedia authoring and publishing tools have become widely available. In 2007 the phenomenon of mass publication of images, wikis, blogs, videos, etc. by multitudes of ordinary people (ie. non-media professionals) is well established. The e-Campus tried to empower staff to develop their own learning materials through a combination of easy to use (but relatively unsophisticated) authoring tools supplemented by a large professional development team. Web 2.0 potentially empowers staff to do it themselves, drawing on a much wider range of resources across and beyond their own institutions. It is also attractive to senior management because it obviates the need to maintain large, expensive media production teams. So if we could do it again, ten years on what would we keep the same and what would we do differently?

**Keep the same:**

- A common delivery environment (AJAX)
- Simple, readily available tools for authoring, assessment and communication (eg. wikis, blogs, Flickr, Skype, Delicious, Google docs, Google Calendar.)
- Establish central funds to encourage faculty-based activity and establish central project selection and monitoring procedures but encourage local project management and autonomy.
- Allocate each Faculty a dedicated "learning development manager" from the central team to work with them to advise on solutions and assist with proposal and materials development, staff development, evaluation and liaison with the central team.
- Enhance staff development opportunities with identified budgets and set up development activities to assist staff to develop and enhance their resource development and learning facilitation skills.
- Establish and publicise reward systems, for example, explicitly recognise successful leadership of innovative learning projects in criteria for promotion; reward involvement in such projects with periods of study leave; provide staff with teaching relief to enable personal and materials development; offer financial rewards for development of quality learning resources.
- Embed TEL in routine QA procedures
- Link faculty TEL development plans to annual budget allocation plans and monitor these centrally to ensure that implications across units are recognized and responded to.

**Do differently:**

- Ensure there is a genuine strategic fit between TEL development and institutional goals.
- Less emphasis on publishing content and more on providing learning tasks plus tools that encourage and facilitate learner to generate their own content.
- Significantly reduce central technical and design support.
- Discontinue use of the centrally licenced and managed VLE.
- Open up technical/authoring training workshops to students.

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