Review of Online Learning at CAFRE

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College of Agriculture
Food & Rural Enterprise

Evaluation of the Online Learning Project

Final Report

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Preface

It would be easy to read a review like this and be overwhelmed by the "to do" lists, accounts of barriers to progress and lack of positive comment. However that is in the nature of being asked to provide recommendations for the future; such recommendations are bound to be focused around improvements. Nevertheless our abiding impression is that much has already been achieved by the Online Learning Project at CAFRE; a surprising amount given the resources available. There are a number of examples where teaching staff have produced innovative and effective e-learning materials, CE6 has been implemented and is running well and there is an enthusiastic core of staff who have the capability to take online learning forward. Obviously there are problems to be overcome, but there is a solid platform on which to build.

In the medium term (the next three years) the greatest gain will be through consolidation and extension of what is already in place. The current system has plenty of spare capacity and the overall functionality of CE6 has not yet been fully exploited. So the immediate message is to make the best use of what we already have. As is often the case making the best use of what is already in place is not a matter of technological appreciation but of designing learning and teaching activities to create technology enhanced learning environments which benefit all students and staff. This requires high quality staff development particularly in online learning pedagogy. Simply doing what we have always done but with a bit more technology is not going to result in major advances. But many of these developments are relatively straightforward ones and staff and students are already aware of them. Some simple things done well and consistently will repay effort greatly.

However the most cost effective mechanism for promoting development of the online learning environment would be a 'Champion' at the senior management level. Someone who could provide encouragement and reassurance to the staff and who would ensure that minor obstacles do not cause a major block to progress.

In the longer term e-learning must be seen as more than deployment of CE6, and as involving the use of a wide range of interoperating applications, from email and the provision of course information at the most basic to video, simulations and collaborative learning environments at the most complex. A wide choice of e-learning tools is needed to satisfy an increasingly diverse population of learners studying many different subjects at an increasing range of levels. Delivery to a more diverse population will throw the questions of how to exploit wireless networks and mobile computing into sharp relief. Indeed a strategic view of network development in general is perhaps the most vital component of a longer term e-learning strategy at CAFRE.

We would like to thank the staff and students of CAFRE for engaging with us so positively during our work. We will not name anyone except Sharon McLaren individually. But without her great efforts to organise meetings for us and her constant willingness to answer our questions this review would not have been possible.

David Morris, Andy Syson, Nigel Briggs, John Tutchings, Vida Bayley, Anne-Marie McTavish.

Summary List of Recommendations

These recommendations are grouped together under the headings given in the Terms of Reference for the review.

(i)   *Software and infrastructure*

CAFRE should keep their email policy under review. In particular if staff and students were to use JANET web mail in the future and Active Directory was used for authentication, then the functionality and therefore, potentially, use would increase.

The CAFRE online learning team should investigate the acquisition and use of file compression software as an approach to overcoming bandwidth restrictions. Given the ubiquity and potential of PowerPoint as a means of delivering online content, deployment of *Impatica* may offer significant benefits.

The CAFRE online learning team should investigate the potential uses of open source software to enhance CE6 functionality. Deployment of open source applications may not be possible on the medium term given the current arrangements with ISB but in the longer term the use of open source web applications may open up significant opportunities. CAFRE needs to take a considered view of the costs, benefits and risks of using open source applications in order to be ready to exploit future opportunities.

The CAFRE Online Learning Team should investigate the use of *Wimba Create* or alternative software as a means of both ensuring that materials published via CE6 are compliant with the latest accessibility standards and as a way of delivering content in a much more attractive and usable way to all learners.

CAFRE and ISB should engage in an open discussion of CAFRE's aspirations for online learning and the implications of these for system accessibility and usage. The network issues contingent on the current arrangements would seem to be complex but not insoluble given goodwill on both sides and we have been given significant evidence that such goodwill exists. CAFRE need to keep ISB informed of their plans and aspirations; it is always more effective if anticipated needs can be built into wider development programmes.

The development of Network NI as a replacement for the existing Northern Ireland Civil Service (NICS) is an important development which may open up opportunities for CAFRE. In particular Network NI embraces developments to C2k, the schools network. Given CAFRE's aspirations to expand the learner base to the 14-19 sector (probably through partnerships rather than direct provision), integration or linkage with C2k could be a major advantage. CAFRE should monitor the development of Network NI.

(ii)   *Feasibility of extending the use of the current provision*

The next phase of online learning and teaching development should focus on exploiting the existing system to the full. There is little point in replacing a

working but underutilised system with another one which may not, in any case, add any significant functionality. Encouraging and enabling staff to use the system effectively requires a structured and well-supported staff development programme to be put in place. This should focus on learning design issues to develop use of the system which goes beyond simple content management and one-way communication.

CAFRE are in a good position to achieve the integration of CE6 and the SRS, having a commercial SRS and Blackboard helping with the integration. The system may be easier to support in the future if it was connected with *Active Directory* for authentication.

(iii) Mobile web-based technology

There has been significant change in the seven years since the initial experiment in using online learning within the Challenge Programme. Many farmers and growers (some thanks to the work of CAFRE) now have computers in their businesses and have acquired the skills to use them. There is wider access to broadband and CAFRE has much greater experience in the use of CE6. The time may now be appropriate for the experiment to be revisited.

Lack of wireless access is a potential inhibitor to further online learning development. CAFRE should assess what the real barriers to providing wireless access to CE6 are and review their policy in this area. Given the extensive nature of the CAFRE campuses it may make good sense to experiment with a limited number of wireless access points in key locations in order to inform policy. In particular the provision of wireless access allows the entire campus to be used as an online classroom or workspace. Wireless access is also encourages students to use their own laptops for study and to promote the redevelopment of traditional open access computer laboratories as "learning lounges" where students can work collaboratively in much more interesting and friendly spaces.

(iv) Future management structure and resourcing of online learning

CAFRE senior management need to decide what the key drivers are for the medium term development of online learning. These will form the underpinning for a clear view of what online learning is for and can help achieve (a renewed vision) and thus for the development of a medium term strategy.

CAFRE should consider where in its current committee structure responsibility for the development of online learning on a cross-college basis should sit. This might be accomplished within the existing structure by having standing agenda items and ensuring that online learning interests are fully represented on the major committees.

CAFRE needs to recognise that extending the learner base via online learning will create new support demands. These will be difficult if not impossible to meet by the current informal methods. These demands will also be different in type from those currently being encountered. Such demands need to be anticipated rather than reacted to and a clear support policy and system established. In part these

new users will judge the entire reputation of CAFRE on how well their problems are dealt with.

CAFRE as an organisation appears to have a very limited knowledge of the views of its students with respect to e-learning. Data are gathered locally but a 'big picture', and especially a central 'big picture', appears to be lacking.

CAFRE should consider introducing a range of change and online learning profile-raising activities including negotiated targets, local action planning and progress reporting.

(v) Engaging and developing staff

E-learning can contribute to many of the activities of the CAFRE from early interest promotion and thence recruitment, through support for diverse student populations to re-engagement of prior students into CPD and lifelong learning. To do this a common approach and vision must be adopted.

CAFRE needs a clearer vision of the place and importance of e-learning and this vision must be associated with strong leadership, at a sufficiently senior level, to take it forward. Key actions for the leader will be to pull relevant business processes into alignment with the needs of the e-learning vision and to engage the interest and enthusiasm of staff.

There is plenty of good work in e-learning taking place across CAFRE, and this deserves to be better promoted and made easier to see. More could be achieved if all the units of CAFRE were working in synergy towards a common goal.

Whilst it is clear that the Online Learning Team are providing an excellent and highly valued support service within the current levels and type of use of CE6, it is also the case that taking e-learning development on to a higher level will require a fundamental shift to a more proactive stance centred around staff development, the provision of help with pedagogic design, e-learning innovation and providing senior management with advice. This could be accomplished by relieving existing members of the team from the more mundane and repetitive work (such as creating sections, resetting passwords etc) and leaving them free to capitalise on their experience by concentrating on developmental issues rather system management.

There are some interesting and progressive examples of good use of CE6 by enthusiastic members of teaching staff. On the other hand there are many staff who do not know how CE6 could benefit them or, if they do, need help in devising ways of realising the benefits. The existing good practice should be spread through a proactive programme of "show and tell" activities including short face-to-face workshops and the development of showcase webs.

Students are not fully aware of what CE6 can be used for and the benefits they could gain from greater engagement with it. However they have a number of useful suggestions for ways in which it could be used to help them. Many of these do not require additional resources but are straightforward changes to existing

practices. Staff should carefully consider these suggestions for early implementation.

(vi)   Opportunities for partnering with other organisations

It is especially important for staff to participate in networks and groups which have common interests. This includes continued active participation in the Celtic WebCT User Group and extending collaboration with partner universities. In this latter case Ulster University has an excellent reputation for innovation in e-learning within a WebCT environment. Ulster has been recognised for this work by being accorded WebCT Institute status. Stronger links with Ulster in the e-learning arena would fit well with the good relationships already built with Ulster in other areas.

(vii)   Staff and student views

Those students who have had the opportunity to benefit from online learning clearly enjoyed the experience, and they would like more of their tutors to enhance the face-to-face teaching by using CE6. Learning should be fun as well as challenging, and e-learning can be used to inject excitement into courses as well as to provide basic on-demand information. CAFRE could recruit, retain and engage the interest of learners by supporting the creation of exciting e-learning materials, and then make the flagship developments very visible to all, and especially to the students and potential students.

CAFRE should establish a user-based group to help those responsible for running and developing CE6. This should meet at least once each semester and should look at all aspects of the operation of CE6 including hardware and software developments, support systems, use data, staff development needs, accessibility etc.

The lack of data on overall CE6 system use could be an inhibitor to further development. Such data can provides valuable information on the pattern of usage by time of day, day of the week, during term time and vacations etc. We understand that such data is held at server level and that CAFRE staff have no access to it. Development of online learning systems can be expensive in both money and time terms. Badly informed decisions can be used as excuses to block or avoid engagement with future developments. It is essential that CAFRE systematically collects additional data on how, how much and when CE6 is being used (to supplement the invaluable information gathered from the existing staff surveys conducted each semester) and exploits this to ensure that policy decisions and innovation are evidence-informed.

The CAFRE Online Learning Team should review the student induction programme for CE6. Current students have found it helpful but there is potential room for improvement.

1. Purpose of the Review

The purpose of this review is to provide Senior Management at CAFRE with recommendations about the future direction of online learning at the College and an independent and objective assessment of the current online learning provision.

A further aim was expressed as *to evaluate the Online Learning Project.*

The Online Learning Project

The key aim of the Online Learning Project was to

allow students, both in the College and those in the industry, to benefit from the enhanced learning experience of online learning

The objectives can be stated as to:

- Enable people from all areas and backgrounds to avail themselves of CAFRE's courses and programmes
- Exploit the potential of online learning to be a more cost-effective means of delivery
- Maintain a broadly based curriculum
- Promote the development of online learning materials
- Train and develop staff in preparing online learning materials and in the management of online learning

There are a number of targets which can be expressed in Table 1.

Table 1: Targets for e-Learning (Online Learning Project).

Target	2003/4 Target	2003/4 Actual	2004/5 Target	2004/5 Actual	2005/6 Actual	2006/7 Actual	March 2008 Target	Aug 2007 Actual *
People actively participating in programmes other than Challenges incorporating distance learning	75	145	260	279	461	642	400	738
Proportion of competence development programme participants accessing appropriate e-learning materials	20%	30%	40%	40%	48%	52%	60%	54%

* End of year figures currently being compiled.

To be eligible for inclusion in the "actuals" column a programme must involve more than 60 hours guided learning with at least 6 hours being delivered online.

A definition of a minimum 10% study time (including assessment) being delivered by online means would not qualify in many observers' eyes as constituting an "e-learning course". The product of 60% of programme participants using e-learning materials for 10% of their time gives a small overall penetration (6%) of e-learning within CAFRE (although, of course, some programmes may have more than a 10% online component). However we recognise that that e-learning at CAFRE is still in its relative infancy and that targets which promote the spread of e-learning rather than localised intensity of use, even at a modest level, are appropriate at this stage. It is also worthy of note that targets have regularly been exceeded and that growth in the use of online learning has continued throughout the period.

Study Web Development

The Online Learning Project provided help and support to staff in developing study webs. This comprised:

- Initial training in the use of WebCT (initially CE4, now CE6)
- Searching for third party (existing) content to identify learning materials for acquisition (which could include purchase or licensing)
- Developing a plan for further development work if needed (although this was focused on means of content acquisition or possibly generation) including release of staff time
- Quality assuring the resulting webs

The Online Learning Project Board

The development of web-based learning provision was overseen by a project board. Apart from implementation issues the board was charged with agreeing a strategy for e-learning. In addition to study web development the strategy placed some emphasis on partnership with other educational agencies and providers.

The stated staff development strategy was confined to a brief statement that staff will be given continued support in the initial training in the use of WebCT and locating resources. Training would be given to

those staff with existing, high usage study webs to enhance their skills to further develop their webs.

There is (again) no specific mention of staff development in online pedagogy; the emphasis is very much on content acquisition and generation.

In addition the following stated aims are of importance, to:

- Monitor the progress with the Joint Academic Network (JANET) and the Northern Ireland Metropolitan Area Network (NIMAN) with respect to online learning to ensure that CAFRE is positioned to make maximum use of these resources

- Monitor IT issues with Information Systems Branch (ISB) to ensure that hardware/network facilities do not impede the development of online learning

Time frame

The time frame for the review as set out in the tender document falls into three phases:

1. The Online Learning Project, 2003 to March 2008
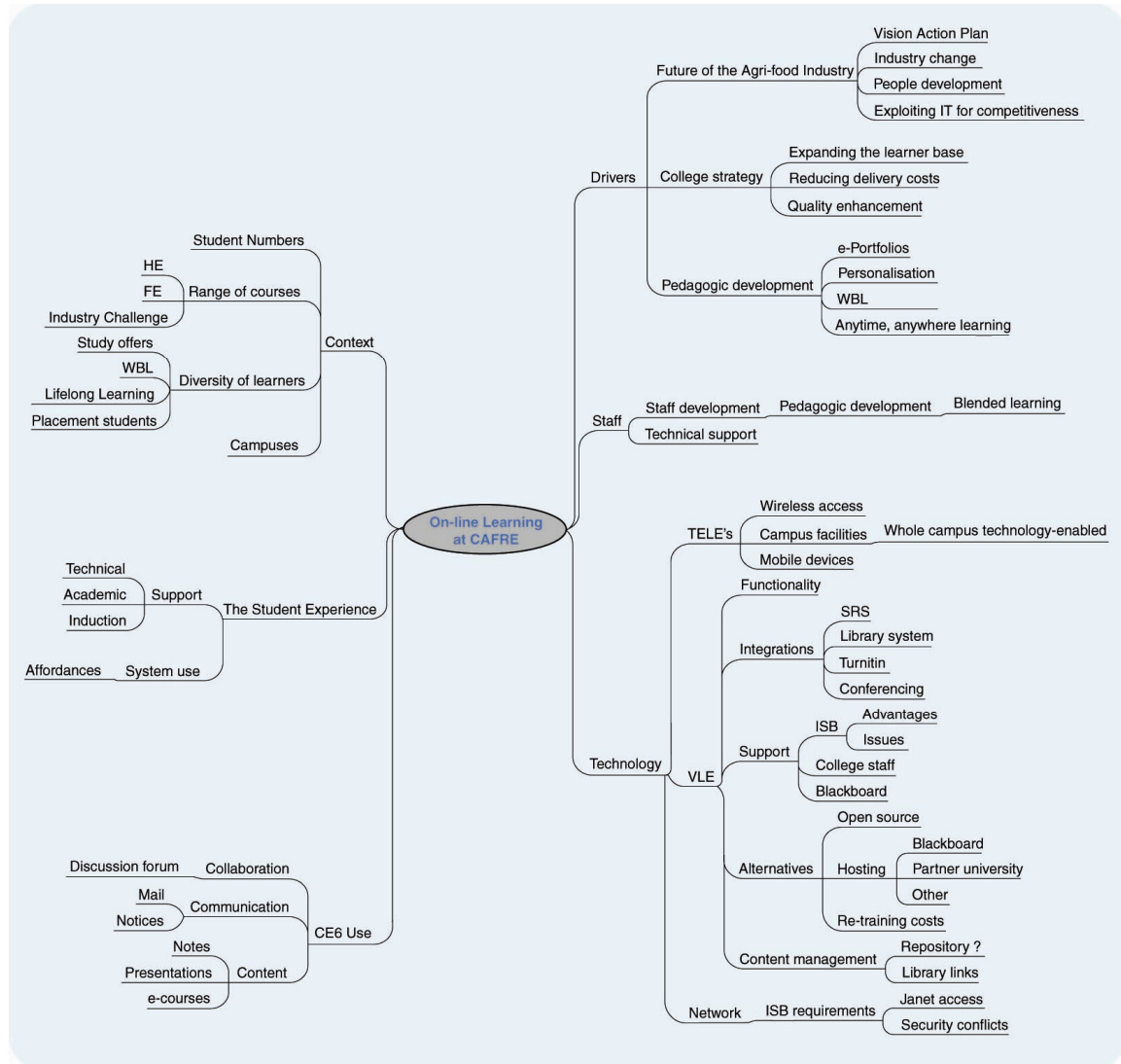2. The "near" future, 2008 to 2011
3. The next five years

In pragmatic terms the time frame is governed by a number of factors, including but not restricted to, the financial write down of servers and associated hardware (December 2011), the replacement of the DARD network with Network NI for staff use, uncertainty about the future nature of the student network, the possibility of a direct (ie not via DARD) JANET link via Queen's University (possibly 2-3 years from now) and the lifespan of CE6.

It is anticipated that Blackboard will announce their 'Next Generation' VLE in summer 2008 for beta testing with the likelihood that it will be ready for full use in September 2009. Blackboard have promised to maintain CE6 for several years after the launch of the next generation product. However it is less likely that Blackboard will invest in any significant development of CE6 post 2009. Staying with CE6 in the longer term would therefore be at the expense of being able to benefit from a more effective, efficient and feature-rich e-learning platform.

2. Overall Structure of the Review

The overall structure of the review is summarised in Figure 1.

Figure 1: Structure of the Review

Definitions

Discussions of e-learning are often fraught with lengthy debates about what different terms mean. In this report we will use the following definitions.

E-learning is the application of digital communication technologies to facilitate learning and teaching, including learning support and services. Often the terms "e-learning" and "online learning" are used interchangeably. However e-learning is a wider concept in that other electronic means may be used, for example intranets or interactive CD-Roms.

Online learning is any learning experience or environment that relies upon the Internet/WWW as the primary delivery mode of communication and presentation.

Distance education is an educational situation in which the tutors and students are separated by time, location, or both. Programmes are delivered to remote locations via a variety of means which may include e-learning.

Blended learning is the mixing of campus-based and distance (remote) learning where a substantial part of the activity goes on in an online environment.

Flexible learning is learning delivered in varying time frames, paces and modes controlled by the learner.

Networked learning is learning delivered via mobile computing technologies (sometimes called m-learning).
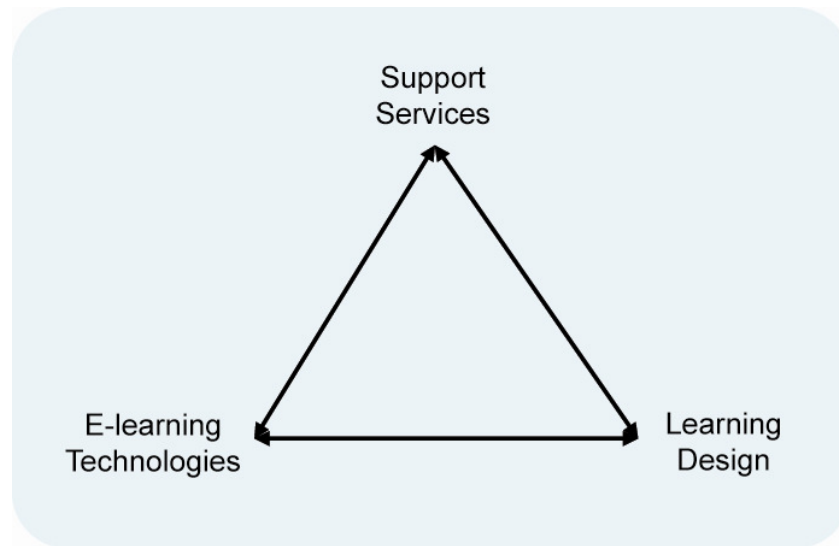
Technology Enhanced Learning Environment (TELE) refers to any setting where technology is used to enhance learning. TELE's often attempt to link together e-learning and face-to-face learning environments through the use of technology to provide an integrated learning experience.

A *Virtual Learning Environment (VLE)* is a set of teaching and learning tools designed to enhance a student's learning experience by including computers and the Internet in the learning process. Blackboard's Campus Edition 6 (CE6) is a well-known example.

A *Managed Learning Environment (MLE)* is the joining-up or interoperation of several separate systems - Student Record Systems, Library Systems, Management Information Systems, VLEs, timetabling systems and so on.

Our approach to the review

The successful application of e-learning requires three mutually interdependent and supporting strands to be present: a successful, fit-for-purpose and reliable technology base; high quality support for teachers and learners and the application of learning design to ensure optimal use of the available technologies.

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                    Support
                    Services



        E-learning                    Learning
        Technologies                  Design
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The six or so years since the report *Vision of the Future of the Agri-food Industry* and the development of the *Online Learning Project* have seen dramatic advances in e-learning technologies and some innovative approaches to providing support for learners and teachers. Most commentators and researchers would, however, argue that there has been less progress in the application of learning design and the use of pedagogic approaches which exploit the opportunities which e-learning technologies afford.

Some of the major changes which have occurred since 2001 include:

- The rapid spread of internet use and the much greater availability of broadband
- The development of reliable wireless networks including 3G
- The spread of mobile and ambient computing via PDA's, smartphones, notebook and tablet computers etc.
- The development of means of providing high quality support to educational IT users on a remote basis
- An emerging shift away from VLE-centric e-learning systems towards those based around digital repositories and encouraging the sharing and re-use of e-learning materials
- The development of e-learning systems based on the integration of web-based services and applications rather than reliance on "monolithic" software systems such as proprietary VLE's
- The rapid growth in user-owned technologies which learners in particular want to use in their studies
- The emergence and rapid take-up of social software systems such as Facebook, MySpace, Flickr and YouTube and e-learning systems which are developed within the same conceptual framework, such as Elgg

- The development of reliable and well-supported open-source e-learning tools and applications such as Moodle (virtual classroom/VLE), WordPress 2 (wiki and collaborative learning) and Elgg (discussion/blogs/tagging etc).
- A stronger emphasis on "green computing".

Stakeholders

We believe the main stakeholders to this review to be as shown in Table 2 below.

<u>**Table 2: Stakeholder Analysis**</u>

Stakeholder	Interest / stake	Importance
NI Government (via DARD)	Better educated workforce; more competitive and successful rural economy; more effective use of technology; value for money; environmental impact of computing; ; higher participation rates in e-learning	High
CAFRE Senior Management	Impact on productivity and staff and student retention; effective deployment of limited budget; higher participation rates in e-learning	High
CAFRE staff	Reliable and effective e-learning technology base; excellent support in all aspects of course design, development and delivery; access to high-quality course content; improved student satisfaction and performance	High
CAFRE Students	More interesting courses; freely available high-quality learning content; excellent access to learning support; reliable and ubiquitous availability	High
IT staff	Reliable and robust systems; ability to provide high quality service within budget	Medium

Methodology

The review was conducted during March 2008 by a team led by David Morris. Details of team members are shown at Appendix 3. The team was chosen for it's multi-skilled base.
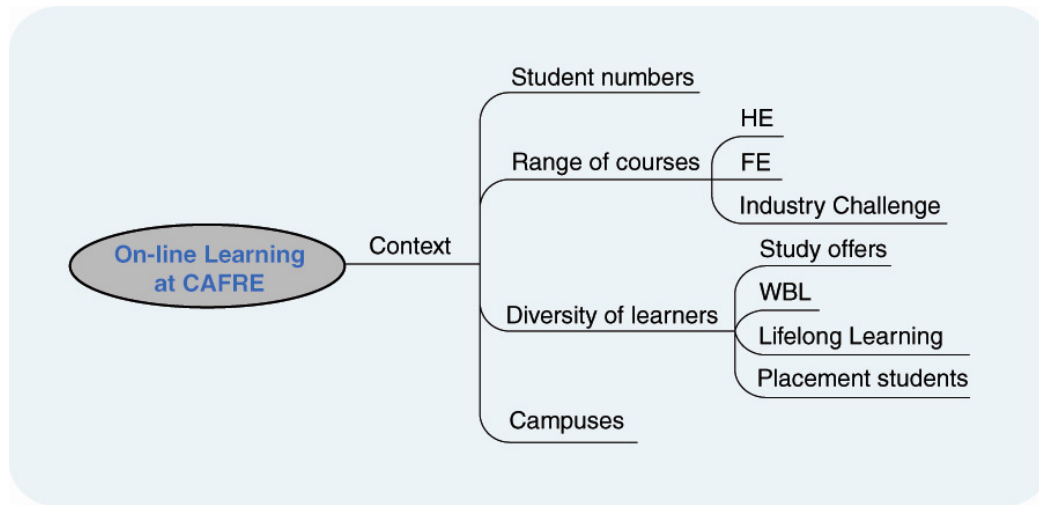
The methodology was essentially one of triangulation, that is the comparison and analysis of evidence from multiple sources which was collected independently by

different team members. In addition we used the Project Management Team at CAFRE as a reference group to check our understanding of the context of the review. A draft report was submitted to CAFRE on 20 March 2008, revised in the light of comments from the Project Management Team and re-presented to the College Director and his two Deputy Directors on 1 April by David Morris. The draft was then circulated to other interested staff. The final report was prepared in the light of comments made at the 1 April meeting. (Circulation to staff during April did not produce any further comments).

The evidence we collected was from:

- Documentary analysis (a list of documents used is shown at Appendix 2)
- An audit of programme and module webs on the CAFRE VLE (CE6)
- Focus group interviews with students
- Individual and group interviews with staff

3. College Context

In November 2001, the then Minister of Agriculture and Rural Development launched a report entitled the *Vision of the Future of the Agri-food Industry*. This report considered how the agri-food industry and the wider rural economy in Northern Ireland should develop over the following 10-15 years and offered detailed recommendations as to how this vision could be realised. The Vision Report made recommendations relating to ten key themes, one of which focused on exploiting the opportunities offered by ICT. Online learning at CAFRE was developed as one of the ICT projects within that theme building on the pilot work undertaken by CAFRE since 2001 using WebCT Campus Edition 4 (CE4) as a Virtual Learning Environment (VLE) to exploit the opportunities offered by the internet.

The Vision Report

The ten themes of the report taken together form a comprehensive long-term development plan for the development of the agri-food industry in Northern Ireland. Two themes "Developing People" (Theme G) and "Exploiting the Opportunities Offered by Information and Communications Technology" (Theme I) are of particular relevance to this study. The Report is firm in its view that to be successful in the agri-food industry there will be a need for those in the industry

to acquire and maintain the necessary skills and knowledge to compete at the highest levels (p.10)

and

there is a need to ensure that more young, trained people enter the industry and bring new ideas which will improve efficiency (p.15).

These priorities are expanded on in Key Theme G in identifying four areas of response (p.21):

- Re-skilling and up-skilling of the existing labour force
- Promotion of lifelong learning
- Benchmarking
- Attracting young people into the industry and ensuring that they have the appropriate skills and training

Key Theme I suggest a very clear role for ICT in the future of the industry (p.24):

- Northern Ireland farmers and processors will need to be ahead of their competitors in exploiting ICT and to be aware of the changes that this will mean to their businesses
- Every effort should be made to encourage the uptake and exploitation of ICT

The links between education and ICT are further spelled out in Recommendation G2 (p.67):

……competence development programmes must be easily accessible, address business needs and deliver immediate business advantage. These programmes should be technology based and develop managers by supporting them to apply best practice in their own businesses.

and G8 (p. 69):

……Priority must be given to developing the competence and confidence of farmers to use ICT effectively.

Particular stress is laid on the needs of farmers in remote areas (p.76):

……Information and communication technology based distance learning must be exploited to meet the special needs of those in remote areas.

The "Vision Action Plan" offered a narrow view of the links between ICT and education by interpreting it as "industry specific training provided by the DARD Colleges". However, a broader view would be that, taken together, these two sets of concerns would suggest a major role for ICT in both delivering education in general to the agricultural sector and in exploiting ICT to improve the impact of that education, one implication being that CAFRE should "walk the talk" where the use of ICT is concerned.

The projects to be implemented under the Vision Action Plan in the Developing People arena were:

- Challenge Programmes, technology, distance learning
- Online learning

Status of the College

The O'Hare Review[1] of agricultural education in Northern Ireland considered the idea of

……merging the DARD Colleges into one institution, which we rejected because economies could not be achieved due to the distance between the colleges and the low combined student numbers

Instead the Panel recommended

…… transfer of the teaching function of each of the DARD Colleges to the neighbouring Institute of Further and Higher Education.

The Government's response[2] was:

The recommendation has been rejected – it drew significant opposition during the consultation exercise. The proposal instead is to combine the three DARD Colleges into a single College within DARD with transparent budgetary and business arrangements under a College Principal. The DARD College will provide advisory and technology transfer functions in addition to the teaching and lifelong learning provision, leading to greater efficiency in service delivery. It will have a separate business plan, targets and budget and will produce separate accounts. The Principal will be responsible for the delivery of the education and development services at the College and a Management Committee will be appointed with external representation.

The College of Agriculture, Food and Rural Enterprise (CAFRE) was formed in April 2004 following a merger of the three Department of Agriculture and Rural Development (DARD) Colleges at Greenmount, Enniskillen and Loughry. CAFRE is, organisationally, one of five divisions within the Service Delivery Group (SDG), itself one of four management units within DARD.

One consequence of this is that CAFRE staff are civil servants. As the O'Hare report noted:

The people working in education and R&D funded by DARD are employed as civil servants and consequently operate within Civil Service rules. In some situations, this may be inappropriate for an activity of which part has to be sharply focused on a competitive sector.

Whilst it is not within the scope of this review to comment on the appropriate organisation of agricultural education in Northern Ireland, the status of CAFRE as a "College within DARD" has potential, and possibly unintended, consequences for the

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[1] Education And R&D In Agriculture And Food Science. Report of Review Panel. April 2002. Available at: http://www.dardni.gov.uk/report_of_o__hare_review_panel.pdf
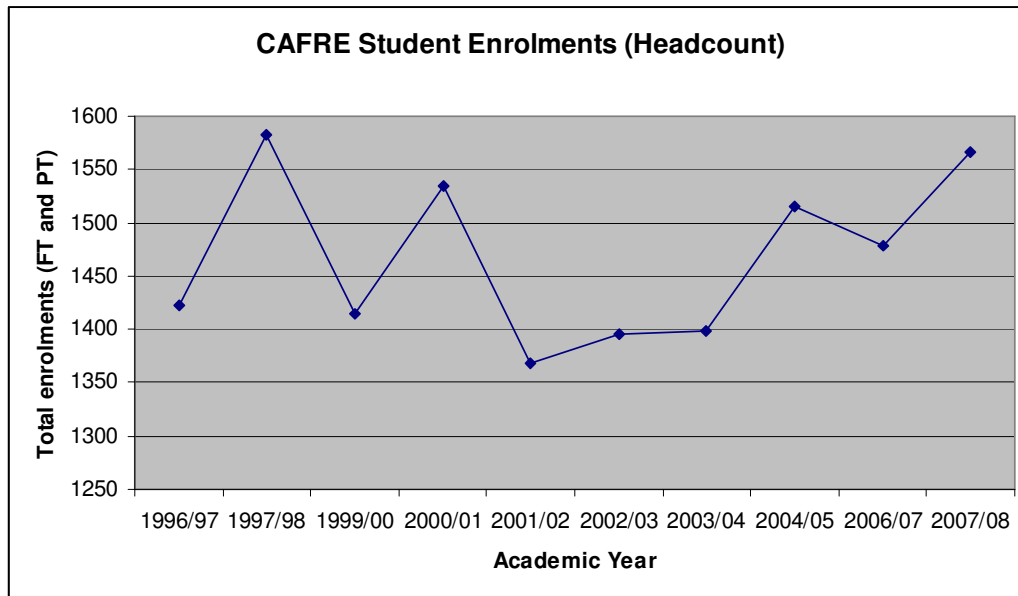
[2] Government Statement on Modernisation of DARD. November 2002. Available at: http://www.dardni.gov.uk/government_s_statement_on_modernisation_of_dard.pdf

development of e-learning at CAFRE. In particular, as we shall see throughout this report, the ICT arrangements which are appropriate in a government department may restrict online learning development.

Student Numbers

Figure 2 below shows the pattern of aggregate student enrolments over the last ten years. Total headcount can be a better measure of potential use of an e-learning system than FT equivalents numbers. Just over half of the students are FT.

Figure 2: Student Enrolments at DARD Colleges/CAFRE 1996/97 to 2007/08.

In addition CAFRE offers a comprehensive programme of short courses. The total number of annual enrolments varies year on year but is in the range 7,000 to 14,000 over the last ten years. The average course duration is between one and two days within an overall range of half a day to 10 days. Although comparisons are difficult in FT number terms this equates to a further 60 -120 students.

Campuses

CAFRE operates from three campuses.

The Greenmount Campus hosts the College Farm and is the centre for amenity horticulture, machinery and buildings and specialist veterinary nursing. There are 184 residential study bedrooms. Greenmount hosts over half of all CAFRE students but a disproportionate number of PT students are based there. About 35% of Greenmount's work is in HE. The Greenmount Resource Centre houses:

- The Library
- Cyber Café
- IT Demonstration Suite for farmers
- Video viewing space
- Open access computer laboratory

The Loughry Campus features food technology and packaging and is home to the joint (with Queen's University) postgraduate programmes in Communications. The bulk of the work is at HE level. There are 100 residential study bedrooms and the student body is biased towards FT. About 30% of CAFRE students are based at Loughry. There is a 24/7 open access computing facility.

The Enniskillen Campus is the smallest of the three (about 205 of all CAFRE students) and majors in equine courses. HE activity is a quite small but significant part of the offering. There are 90 residential study bedrooms. There is a small 24/7 open access computing facility.

Programmes

The College is organised into two services. The Education Service equips those entering or working in the industry through programmes of Higher (HE) and Further Education (FE). The Development Service addresses the professional development needs of those already in the industry.

HE

A wide range of programmes ranging from Higher National Certificate (HNC), Foundation Degree (Fd) and Higher National Diploma (HND) to Postgraduate Certificate (PgCert) and Master of Science (MSc) level is provided. HE is provided in partnership with Queen's and Ulster Universities as well as CAFRE's own provision validated by OUVS (Open University Validation Services). Provision is available in full-time (FT), part-time (PT) and Distance Learning (DL) modes.

FE

The Further Education (FE) activity at CAFRE is intended to provide suitably trained people for the agri-food industry as well as re-training on a lifelong learning basis to equip people to respond to technical advances or changes in market demand.

Professional Development and Industry Training

A comprehensive lifelong learning offering , known as Challenge Programmes, has been initiated to assist those in the industry develop competencies of direct relevance to their business, making full use of the business as the learning resource. These programmes help participants to meet a specific business objective through a supported learning environment. Challenge Programmes can be seen as one response to the Vision recommendation G7 that:

Group-based learning approaches should be adopted where possible to secure the benefits of peer support and help develop an ethos of collaboration and co-operation.

CAFRE interacts with about 15,000 learners per year on courses from half a day in length to the equivalent of 10 days. They range from practical programmes on agricultural skills, through refresher programmes, short courses driven by new legislative or reporting requirements to updating sessions. The "Challenges" scheme also covers business and management courses.

Under the Challenges environment courses are designed to meet a particular business performance goal and thus improve profitability (for example, improving dairy herd fertility). Local groups of up to 15 participants meet with the help of a Development Adviser. They undertake farm visits, refresher courses as needed and work in discussion groups. The Development Adviser accesses specialist resources (including experts) when their need is identified by the group, acts as a mentor and promotes application of learning back in the businesses. The learning style is collaborative and activist. Approximately 4,000 participants have gone through the programme since 2000. Over 40% of them opt for accreditation and assessment (usually via portfolio). Challenge Programmes are accredited by Edexcel.

The areas covered are:

- Equine
- Rural Enterprise
- Food Technology and Packaging

- Environmental Issues
- Renewables (including Energy)
- Crops and Commercial Horticulture
- Dairying
- Pigs
- Beef and Sheep
- Ancillary Industries
- Amenity Horticulture
- IT Applied to Agriculture

There is also a Farm Diversification Programme which is assessed via presentation of a business plan.

When the Challenge Programmes were first introduced, a small scale experiment was undertaken for a trial e-learning group of 12 farmers but this proved not successful. CE6 is not used in these programmes at all. However ICT is used "to support" these activities. One example is CAFRE's development and maintenance of a portal (http://www.ruralni.gov.uk) to provide farmers and growers with information, applications such as nutrient calculators and business and transactional services.

> There has been significant change in the seven years since the initial experiment in using online learning within the Challenge Programme. Many farmers and growers (some thanks to the work of CAFRE) now have computers in their businesses and have acquired the skills to use them. There is wider access to broadband and CAFRE has much greater experience in the use of CE6. The time may now be appropriate for the experiment to be revisited.

Learning Contexts

CAFRE students study in a wide range of contexts, including:

- FT residential study
- FT and PT "day-trippers"
- Lifelong learners
- Distance learning
- Work based learning (WBL)
- Placements
- Field studies

These contexts cover a variety of physical environments and locations. Online learning can permeate all these contexts and to provide a means of integrating them into a vibrant and connected technology enhanced learning environment.

The Budget

Online learning development has so far been funded under the Vision Programme. This ends on 31st March 2008.

Non-staff spending has been as follows:

2003/04	£17,436
2004/05	£25,024
2005/06	£21,627
2006/07	£15,445
2007/08 (to date)	£15,674

The bulk of the non-staff spend is on the CE6 licence (£12k pa) the rest is spent on content acquisition (eg ECDL, Bb e-packs), copyright payments and a very limited amount on training and development.

The funding allocated to the project has been:

2003/04	£198,000 (£108,000)
2004/05	£204,000 (£110,500)
2005/06	£180,000 (£97,500)
2006/07	£57,375
2007/08	£33,000

The figure in brackets is the amount of Vision Funding allocated. It is clear that CAFRE has also made significant investment in the development of online learning from its core budget.

Committee Structure

Figure 3 summarises our understanding of the teaching and learning committee structure.

Figure 3: CAFRE Committee Structure for Teaching and Learning

The Industry Teaching and Learning Committee is currently being formed. All members of the Education Management Team sit on the College Management Team. A significant number of the Industry Training Board also sit on the College Management Team. However only the chairs of the Teaching and Learning Committees sit on the Education Management Team. The functions of the former Online Project Board are now integrated within the Education Management Team. It would seem doubtful that this would provide an adequate structure for discussing the development of online learning on a cross college basis. In particular the application of e-learning to industry training may receive less attention than it might.

There is no CE6 user group or Board guiding its development. However a group of staff does meet twice a year to discuss CE6 developments and service. There has in the past been a group responsible for e-development but this was IT driven rather than primarily concerned with learning and teaching or pedagogy.

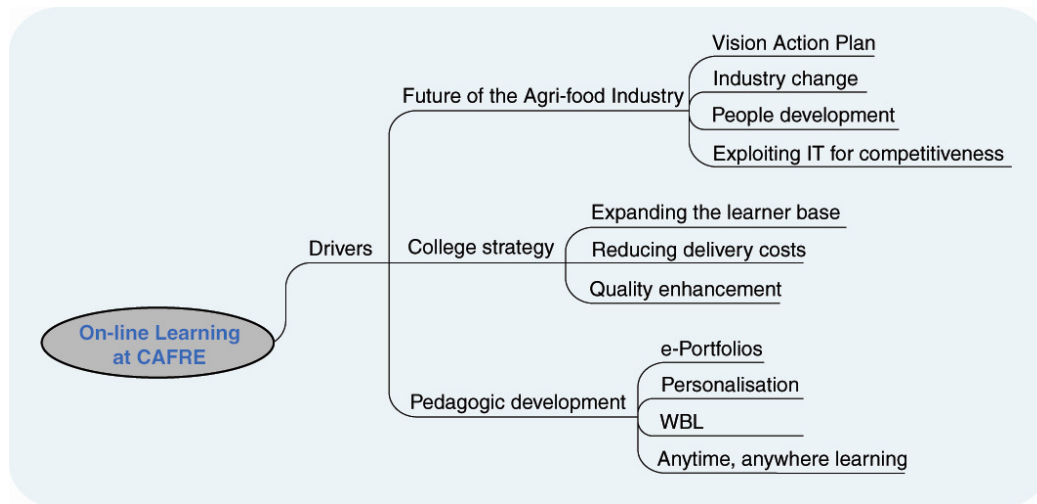There seems to be little, of any, "local" activity designed to raise the profile of online learning within CAFRE. "Local" can apply both in a physical sense (by campus) or by programme. A further impetus is needed to take online learning development to the next level and a change management programme will be required. This will need to include local action planning within a college-wide strategic framework.

CAFRE should consider where in its current committee structure responsibility for the development of online learning on a cross-college basis should sit. This might be accomplished within the existing structure by having standing agenda items and ensuring that online learning interests are fully represented on the major committees.

CAFRE should establish a user-based group to help those responsible for running and developing CE6. This should meet at least once each semester and should look at all aspects of the operation of CE6 including hardware and software developments, support systems, use data, staff development needs, accessibility etc.

CAFRE should consider introducing a range of change and online learning profile-raising activities including negotiated targets, local action planning and progress reporting.

4. Drivers for e-Learning

Our interviews with senior college staff and documentary analysis have identified the following drivers for the development of online learning at CAFRE:

- Expanding the learner base to 14-19 year olds via partnerships with schools
- Expanding the learner base of those already in the Northern Ireland Agri-food industry
- Improving and enhancing the quality of the current provision
- Reducing delivery costs and improving the economics of programme delivery
- Re-skilling and up-skilling of the existing labour force
- Promotion of lifelong learning
- Attracting young people into the industry and ensuring that they have the appropriate skills and training
- Ensuring programmes are easily accessible
- Helping farmers use ICT effectively
- Meeting the development needs of those in remote areas
- Enhancing partnerships with other providers, for example universities
- Adding new (online) students to existing (face-to-face) courses
- Improving the quality of the learner experience

We can add several other potential business drivers to this list:

- Accessing markets which are currently difficult to support
- Adding excitement, interest and variety to course delivery (the "wow" factor)
- Entering new markets
- Promoting student retention
- Creating a potential source of competitive advantage

In addition there are social and educational changes which have an influence on online learning:

- The increased expectations of learners in terms of service delivery
- The pressures for curriculum and pedagogic change leading to a greater emphasis on collaborative learning, creating and applying knowledge, problem solving and developing "enterprise" rather than a didactic approach based on the transfer of knowledge.
- Greater personalisation of learning via the use of (e-) portfolios, individualised pathways and more varied assessment regimes
- The changing context of learners leading them to demand greater flexibility in programmes including the ability to "time-shift" and "place-shift" learning activity to fit in with other demands on their time. This is particularly the case with work-based and lifelong learners.
- A growing ownership of personal computing devices and familiarity with software (including Web 2.0 social software)

It is somewhat of a paradox that one area of CAFRE's work which resonates with several of these drivers illustrates little or no use of online learning. The Challenge Programmes use a collaborative and activist learning style with a "curriculum" which is dictated by group needs rather a college designed syllabus. Assessment (which is voluntary) is by individualised work-based projects. Many of the potential learners are farmers working in remote areas.
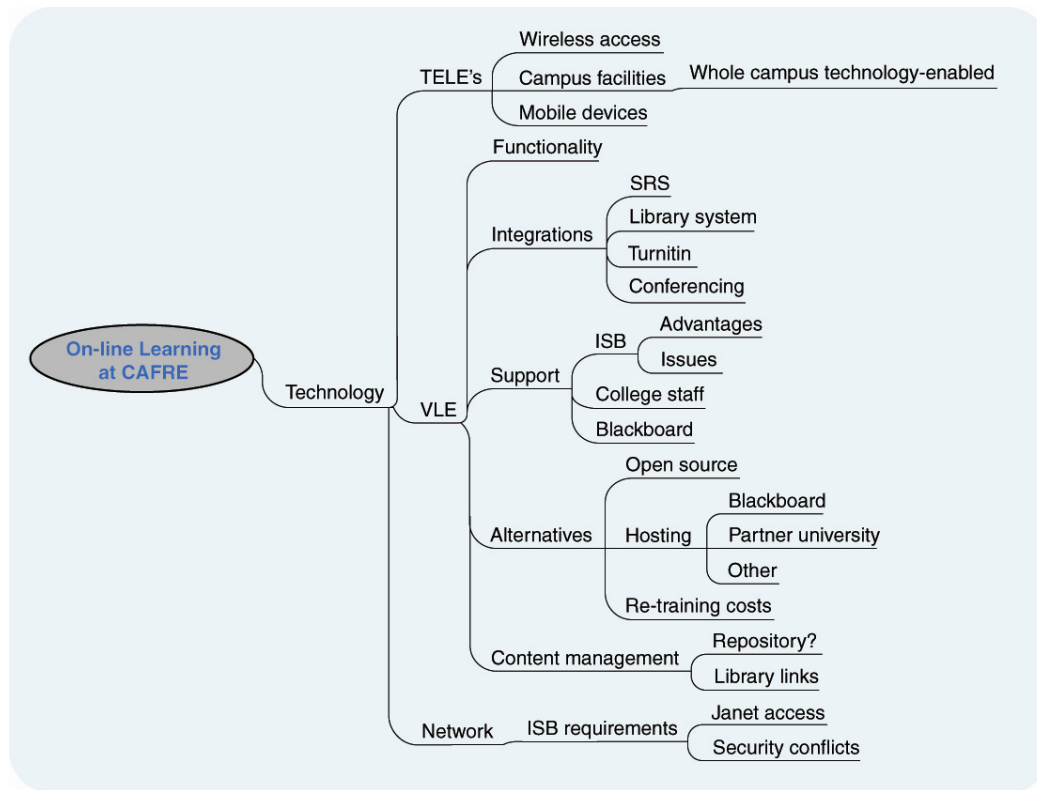
However it is not clear (as the evidence in Section 7 of this report suggests) that the majority of teaching staff in CAFRE share these drivers for change in a positive way. They are undoubtedly, for the most part, fully aware of these "drivers" but may see them more as unwanted "pressures" in an already busy working life.

The list of drivers is already a long one and could no doubt be added to. It may well be necessary and desirable to prioritise development by looking at which drivers are most important in the medium term (ie the next three years) and which may be better addressed over a longer time period. This is not to say that medium term concerns will disappear or that longer term ones can be totally ignored for the moment. However, given limited resources (in particular of staff time), some prioritisation seems desirable.

CAFRE senior management need to decide what the key drivers are for the medium term development of online learning. These will form the underpinning for a clear view of what online learning is for and can help achieve (a renewed vision) and thus for the development of a medium term strategy.

E-learning can contribute to many of the activities of the CAFRE from early interest promotion and thence recruitment, through support for diverse student populations to re-engagement of prior students into CPD and lifelong learning. To do this a common approach and vision must be adopted.

5. The IT Infrastructure

System History

It is helpful to recall the development timeline to date. The milestones are summarised below.

Pre 2001	Some experimentation with CD's, intranets and shared drive systems etc.
2001	Small project to test "Internet-based Learning" and experimentation with an extranet (which used an external server)
2002	Implementation of WebCT CE4
2003 to March 2008	Vision Funding
January 2007	Implementation of CE6
Summer 2008	Integration with SRS

This development follows a familiar pattern from some individual and scattered experimentation through to a more structured pilot project to implementation of a VLE to the first steps towards a MLE (through integration of the VLE with the SRS).

Hardware

Blackboard CE6 is running on two servers, one being the outward facing web server and the second being the MS SQL database server. These are managed by the Information Systems Branch (ISB) of DARD.

Software

The VLE is currently a single node instance of Blackboard CE6, no other e-learning software is currently being used.

A "single node instance" should be capable of accommodating up to 250 simultaneous users. This would seem more than adequate to accommodate CAFRE's likely needs over the potential life of the current hardware and certainly in the medium term. Any bottlenecks or restrictions on expanding use are likely to come from other directions, for example network capacity. However it must be remembered that as online learning is developed the demands placed on the system increase both in volume and complexity. Complexity manifests itself in the size and types of files used in teaching and learning. As staff become more sophisticated and ambitious in their use of e-learning systems they tend to want to use more media-rich materials which generate large media files. This limits the numbers of simultaneous users the system can handle because the use is "heavier". However we still would not anticipate the current hardware and software configurations being a limiting factor.

Some of the staff we spoke to were of the very clear view that the use of extra software would greatly enhance the CAFRE e-learning offering. This includes the possible use of the open source[3] application WordPress 2[4] for collaborative learning. There is also an opportunity to use image galleries such as CopperMine[5] or PixelPost[6] when students are undertaking plant identification.

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[3] "Open source" is a less-confusing name for what is also called 'Free Software'. It describes the development method used for many pieces of software, including the Linux kernel, where the source is freely available for anyone to work on, or modify, or learn from, or use in other projects.

[4] http://wordpress.org/

[5] http://coppermine-gallery.net/

[6] http://www.pixelpost.org/

The CAFRE online learning team should investigate the potential uses of open source software to enhance CE6 functionality. Deployment of open source applications may not be possible on the medium term given the current arrangements with ISB but in the longer term the use of open source web applications may open up significant opportunities. CAFRE needs to take a considered view of the costs, benefits and risks of using open source applications in order to be ready to exploit future opportunities.

The Network

CAFRE do not run their own network and there are no campus-based servers. As a branch of the Department for Agriculture and Rural Development (DARD) they use the IT services of the Department under Civil Service "rules". These are run by the Information Services Branch (ISB).Effectively ISB provides a hosting service to CAFRE where CE6 is concerned. No direct charges are made to CAFRE for the service. Probably the nearest comparison to this arrangement would be to use the Blackboard hosting service. Whilst it is not possible to be precise about what Blackboard would charge for hosting the CAFRE CE6 system we believe this would be in the region of £12k to £16k per annum.

However CAFRE have to pay for any integrations and they would probably have to bid for additional funds since the post April 1 2008 college budget for e-learning/IT makes no provision for other than normal operational costs. CAFRE pays the Blackboard license (approx. £12k) direct. There are currently no other software licenses for e-learning other than some for third party courses, for example the European Computer Driving Licence (ECDL) provision and some Blackboard e-Packs.

The management of the physical servers is carried out by ISB who also maintain the operating system. Blackboard upgrades are carried out by CAFRE staff who have to travel to the machines to install the upgrades and patches. If the server needs to be restarted then ISB are asked to restart the machine and normally carry this out fairly quickly.

CAFRE are under a restriction that ISB will not support software where these is not a support mechanism in place, this would place the responsibility on the IT staff at CAFRE to support the software. The main implication here is that the majority of new e-learning software is open source and does not have such a structured support network. This would include Linux, Apache, MySQL and php, the combination of which is known as LAMP software; for example LAMP software includes Elgg, WordPress and Loudblog. Much open source software is now very well developed and reliable in use and has the major advantage of being free. In some cases freely

available software integrations can be used to embed open source applications within a VLE, including CE6. This is the case with Elgg.[7]

This organisational structure could lead to conflicts, misunderstandings, time delays in getting things done etc. However CAFRE staff who are directly involved find the relationship with ISB support staff constructive, professional and helpful. Senior staff also recognise the positive aspects of ISB involvement. However CAFRE staff who are not directly involved with the system or ICT policy, but who are nevertheless actual or potential end users, tend to have a more negative view and focus on the perceived downside of the relationship.

Firewall and security

ISB control the firewall which is an extremely secure one due the fact that the ISB's network is part of the Civil Service network. CAFRE have no control over the firewall and other security settings and need to put change requests into ISB for consideration.

ISB tends to have very tight system security as they are dealing with a lot of personal and confidential information belonging to farmers and others. These security arrangements apply to CAFRE e-learning activity. Amongst other restrictions this means that:

- Wireless networks are not allowed on campus
- Synchronous communication facilities (such as chat and Who's Online) are not enabled

Whilst Government IT networks should be, particularly in the current climate of public opinion, as secure as they can be, education networks tend to be much more open. The content on educational systems tends to be low security and in many cases is not protected via access and authentication systems at all. Of course it may still be necessary to protect the hardware on which the content resides to protect against possible loss of data. If that hardware is linked to other systems where there is a high risk attached to their being compromised then greater security is required. However if such linkages do not exist then rarely is it necessary or desirable to protect access to teaching and learning systems by other than a fairly simple passwording system. Valuable content must, of courses, be backed up and secured but this is not the same as having strict access controls. Indeed a prime mover in designing educational systems is often to make access as easy as possible, by as many means as possible and from anywhere. In other words they are designed to be ubiquitous, and nearly all online learning systems are web-based to reflect this. However even web-based systems cease to be ubiquitous if access is limited, for example by not being available wirelessly.

There is therefore a difference in philosophy where security is concerned between the designers of Government networks and educational systems intended for teaching and learning.

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[7] Elgg was developed by some of the same team responsible for the original versions of WebCT. It is widely used in the UK with great success and is supported by an active user group.

We have not discussed this issue directly with ISB system managers. However we recognise the goodwill that exists between CAFRE staff and ISB colleagues and the significant value of the services that ISB provides. Indeed we think it is unlikely that CAFRE could provide an equivalent level of server and network management expertise from within its own resources. The downside risks of potential system downtime might also be greater if the servers and network were under local CAFRE management.

There is a delicate balance to be struck between the ISB's legitimate concerns with network and data security and CAFRE's desires to develop a highly accessible online learning presence to serve a wide variety of students in very diverse contexts. However given the goodwill which exists at the operational level between ISB and CAFRE staff, we believe that a middle way which balances the two sets of aspirations can be found. Developments in technology and planned changes to the network infrastructure should aid rather than hinder this search. The resolution might be to develop independent administrative and teaching and learning (academic) networks with different security arrangements. These may not mirror exactly the existing "staff" and "student" networks. For example it may be that not all teaching staff require such regular access to the administrative network that they could not be effectively served by (wired) campus-based computers.

> CAFRE and ISB should engage in an open discussion of CAFRE's aspirations for online learning and the implications of these for system accessibility and usage. The network issues contingent on the current arrangements would seem to be complex but not insoluble given goodwill on both sides and we have been given significant evidence that such goodwill exists. CAFRE need to keep ISB informed of their plans and aspirations; it is always more effective if anticipated needs can be built into wider development programmes.

Authentication

CAFRE's Student Record System (SRS) is Capita's UNIT-e which is a proprietary system widely used by other institutions particularly in the FE sector. It has built into it the notion of courses with cohorts which is essential for integration with CE6, where cohorts relate to the sections that students are enrolled on.

Blackboard CE6 is currently not integrated with UNI-e but work for this is due to start very shortly with Blackboard staff doing the majority of the work. The current set of student and staff users and their mapping to sections in CE6 will need to updated as their primary identifier, the source ID, has not been set. Currently the default values that CE6 assigns are being used instead. Until Blackboard start their work it is not known if all the sections and users will need to updated manually, which could be time consuming, although the problem is not insurmountable given the current level of use.

A major part of CE6 support staff workload is the creation of the study webs (sections) together with their correct students. This is a very time consuming process that requires great attention to detail. The college has a standard college template that all study webs use as their initial starting configuration. The template contains the module evaluation form and a standard set of course tools.

The college is currently working on the integration of the student record system with the virtual learning environment. This will considerably reduce the workload and enable the online learning team to put more time into support and training. Unfortunately the integration will not ease the other major burden on the system administrators, that of continually having to reset the passwords of staff and students. A single sign-on configuration would be the best way of freeing up support staff time so that they can be more pro-active in what they do rather than helping users recover from difficulties.

> CAFRE are in a good position to achieve the integration of CE6 and the SRS, having a commercial SRS and Blackboard helping with the integration. The system may be easier to support in the future if it was connected with *Active Directory* for authentication.

Mail

CAFRE have subscribed to the JANET web mail system, however a decision was made to use the CE6 mail system only. The use of the internal mail system of CE6 has its limitations as users have to log in to CE6 to check their emails. Email can be forwarded from CE6 to an external address but this forwarded email cannot be replied to.

> CAFRE should keep their email policy under review. In particular if staff and students were to use JANET webmail in the future and Active Directory was used for authentication, then the functionality and therefore, potentially, use would increase.

Document Management

DARD is developing a document management system (TRIM) to further safeguard government information and allow FOI considerations to be managed. This will operate on a remote desktop basis and staff will not be permitted to store or download any documents locally. So, for example, staff would not be able to keep presentations on memory sticks or have copies of class notes on their hard drives. At the moment, there is a 'local button', which allows staff to hold their work on their own computer until the end of the semester, when it must be transferred to TRIM. This 'local button' is likely to be lost soon.

There is substantial staff mistrust of TRIM. Much of this appears to be misplaced. For example some staff believe TRIM will preclude the use of mail attachments; this is not the case. However staff misgivings need to be addressed through the dissemination of better information on the system in particular and good document management practice in general.

Gradebook

Currently the use of the Gradebook appears to be limited to the few assessments and assignments that are delivered online. The Gradebook is not used to return the marks to students for work that has been submitted and marked in the traditional fashion. In particular Gradebook does not seem to be used to manage coursework assessment regimes where there are multiple components. The marks could for individual components could be stored and managed in Gradebook to produce an overall coursework mark. Students could view their marks and, if necessary, query them early on. Gradebook also allows students to see, at the tutor's discretion, summary mark data for entire class. The planned integration of CE6 with the Student Record System will facilitate the use of the Gradebook for the management of individual component marks and automatic upload of final (aggregate) marks to the SRS, but no plans are in place for this at present.

Connectivity

Figure 4 below represents our current understanding of the network configuration.

Both staff and students link to Dundonald House via the ISB network. From there internet traffic is carried by JANET.
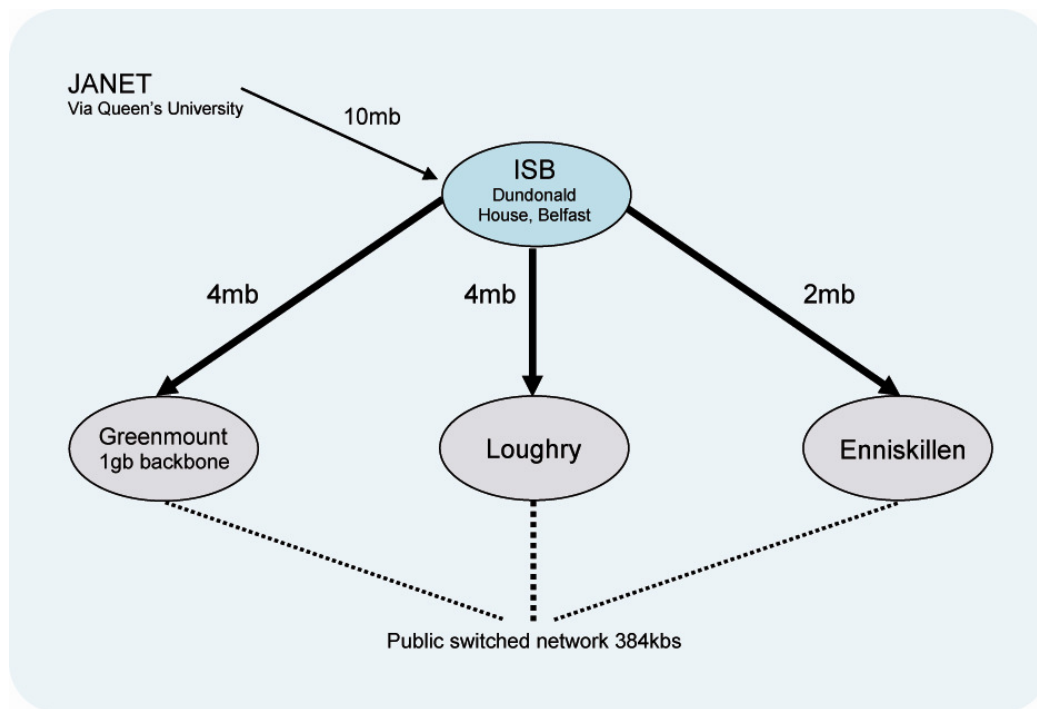
On the surface the links from ISB to the campuses would appear to be a major limitation. However we understand these are dedicated lines and given current use levels of CE6 should not present a major problem. These links can be upgraded to 32mb (at extra line rental costs) at short notice so it should be entirely possible for the existing network to keep pace with demand in the medium term.

> The development of Network NI as a replacement for the existing separate Northern Ireland Civil Service (NICS) networks is an important development which may open up opportunities for CAFRE. In particular Network NI embraces developments to C2k, the schools network. Given CAFRE's aspirations to expand the learner base to the 14-19 sector (probably through partnerships rather than direct provision), integration or linkage with C2k could be a major advantage. CAFRE should monitor the development of Network NI.

Network NI[8] will also facilitate additional internal staff applications, such as Voice over IP (VoIP) and video conferencing, both of which will enhance CAFRE's future online services development.

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[8] See http://www.dfpni.gov.uk/index/delivery-and-innovation.did-reform/did-networkni.htm

Figure 4: CAFRE Network Diagram

Current Blackboard software systems produce so-called "fat" pages. These put extra pressure on networks. At the current levels of usage the 4mb links to the campuses should be sufficient to cope with the traffic. However if usage increases in either volume (more users) or complexity (staff using the system to deliver more complex and media-rich learning objects) then the network will exhibit signs of slowing down.

There is no wireless connection service anywhere on the three campuses. This is a result of the DARD security policy. Residences are cabled. However at Loughry there is no computer access in study bedrooms.

Bandwidth availability is particularly limited in rural and remote areas of Northern Ireland. This includes the availability of more recent services such as 3G.

Accessibility

There seems to have been little explicit consideration given to accessibility[9] issues. Whilst accessibility is nearly always taken into account by designers in developing public web sites it can easily be overlooked in the development of webs within VLEs. The developers of such sites are often lecturers who have no training in making their

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[9] "Web accessibility" refers to the practice of making pages on the Internet accessible to all users, especially those with disabilities.

sites accessible. Indeed there may be little requirement or incentive to do so unless there is a specific need from a particular user.

However accessibility considerations are not simply a matter of compliance with legal requirements when necessary. A little attention to the design of web pages can make dull and indigestible content attractive to online users. For example *Wimba Create*[10] not only ensures that materials are fully compliant with the latest accessibility standards but also easily converts standard Word documents into an attractive online format with full navigation tools.

> The CAFRE Online Learning Team should investigate the use of *Wimba Create* or alternative software as a means of both ensuring that materials published via CE6 are compliant with the latest accessibility standards and as a way of delivering content in a much more attractive and usable way to all learners.

System Developments

The integration of the SRS (Capita UNIT-e) and CE6 is being undertaken shortly.

Successful tests have been carried out using Turnitin, however it is also possible that CAFRE will use Blackboard's SafeAssign. . CAFRE is currently evaluating which anti-plagiarism package it will adopt. However, given the security and network arrangements with ISB, there could be problems with implementing Turnitin. These could be averted by discussion at an early stage.

There are no plans to integrate with the library systems (also hosted by ISB) and we are not aware of any digitisation projects.

Constraints

The current hardware, software and network arrangements present a number of actual and potential constraints to the development of online learning at CAFRE. These include:

- ISB security requirements which prevent use of the full functionality of CE6
- Limited technical expertise available (either specialist in educational systems at ISB or within CAFRE; no support contract with Blackboard)
- Poor 3G coverage in Northern Ireland
- Limited connectivity between campuses
- Network incompatibilities (NICS network, JANET, C2k, regional FE colleges)
- Low bandwidth availability in some areas (56Kbps)

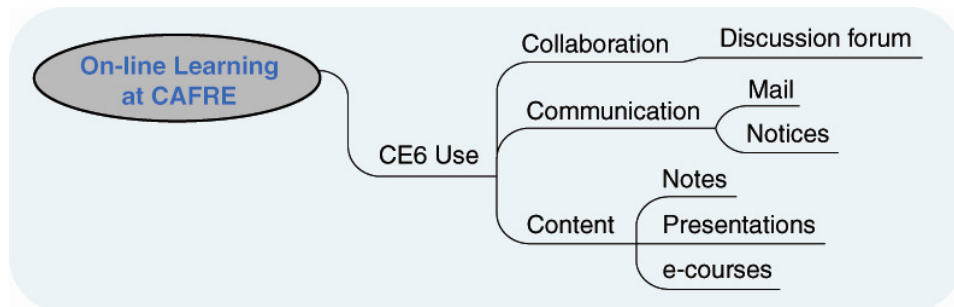[10] http://www.wimba.com/products/wimbacreate/

As we have noted above some of these constraints can be mitigated by constructive engagement between CAFRE and ISB staff. It should also be possible to make significant gains by attempting to influence future developments (eg Network NI) in the college's favour. However these will not have any effect on remote learners dependent on the public switched network for access to the system.

Much can be achieved by looking at the issue from the "other end of the telescope". Limited bandwidth problems can be reduced by using much smaller files. In part this means avoiding the use of complex and large (in file size terms) objects such as photographs, video clips and the like. PowerPoint files can become very large and unwieldy as quite simple files are embedded within presentations. Such good housekeeping can keep file sizes manageable. However discouraging staff from enriching their teaching materials with visual and audio content is not the best route. A more helpful approach is to employ simple compression software systems. For example *Impatica*[11] is a cost effective and very simple to use compression system which can reduce the file sizes of PowerPoint presentations by 95% without loss of quality. Similarly there are a number of inexpensive commercial and some free software packages capable of compressing Word and PDF files to as little as 2% of their original size.

> The CAFRE online learning team should investigate the acquisition and use of file compression software as an approach to overcoming bandwidth restrictions. Given the ubiquity and potential of PowerPoint as a means of delivering online content deployment of *Impatica* may offer significant benefits.

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[11] http://www.impatica.com/

6. CE6 System Use

If you are a campus based student you may already have paper-based learning materials prepared by your tutors, so you will be using Blackboard as a means of keeping up to date with your course, submitting assignments, and communicating with your fellow students on shared projects. Your tutor will also be able to offer you self-test questions so you can test your own understanding, and a source of exam preparation tools, such as quizzes, and access to your grades. (CAFRE Web Site)

Audit of CE6 Use

We requested "auditor" access to the CE6 system. This allows us to see what use is being made of the systems but not any student details or access to private communications such as mail. We cannot, therefore, offer any judgment on how intensively modules are being used or how many students are actively engaged in CE6 use.

We looked at 230 "sections" out of the 235 made available to us. The remaining five were used for training or testing purposes. "Section" is a general term used to describe a unique web space within CE6. A section could be used for a course web (ie covering all students on a named course eg BSC Agriculture), or a module web (that is a defined component of a course) or for general purposes (for example to support placements, generic study skills or provide learning materials on a subject basis which would be of use across many modules and/or courses). We do not know how many sections would be created if CE6 was used in all courses and modules. Of the 230 sections we looked at 166 were "active", that is they showed evidence of use of a CE6 "tool". A "tool" is a feature made available to aid teaching and learning.

The table below summarises the types of use being made.

Activity	Number of sections making use of a tool N = 166	% of active sections using the tool
Content	151	91
Quizzes	104	63
Weblinks	94	57
Discussion board	35	21
Gradebook	53	32
e-Packs etc	11	7

The most frequent use of CE6 (as it is everywhere) is to post lecture notes, presentations and other forms of content. In this situation CE6 is being used as a basic content management system and may not offer any great advantages over using, say, a shared drive or simple web site.

There is some growing use of quizzes and many CAFRE student users of CE6 who have been exposed to online quizzes say that they like them. They have fairly obvious applications in areas such as plant identification for example. We understand that some staff training in how to write MCQs (multiple choice questions) is planned.

Weblinks are simply routes to other websites outside CE6. These could include links to professional bodies, public course material, learning materials in other repositories and many other sources.

The discussion board is essentially a group e-mail system and allows asynchronous discussion between students and tutors. Research on discussion board use suggests that it is particularly valued by students who find engaging in face-to-face discussion a challenge. This could include students whose first language is not English or who are particularly shy in face-to-face situations.

The data on the use of Gradebook is surprising. Our interviews with students and staff suggested it was rarely used at all. Gradebook allows staff to manage student assignments in a single environment and students can, at the lecturer's discretion, see their own marks and/or a summary of the overall performance of the group. Gradebook can be particularly effective in saving time and providing feedback when allied to automatic (computer) marking of quizzes or other online assessments. The evidence suggest that this the mode in which Gradebook is used at CAFRE.

e-Packs are third party learning materials provided to cover particular frequently studied subject areas. They contain notes, presentations, video material, quizzes and other content. "e-Packs" is a Blackboard trade name for such materials but they are also produced by textbook publishers and others.

On average each active section used three tools. Thirty seven sections (22%) used only the content tools. Forty six (28%) sections used four or more tools.

CE6 does provide other tools which are not available at CAFRE. Notably these include synchronous communication tools such as "chat" and "who's online". Chat is familiar to students through well known applications such as MSN Messenger and allows groups of students to conduct simultaneous online conversations.

> The lack of data on overall CE6 system use could be an inhibitor to further development. Such data can provides valuable information on the pattern of usage by time of day, day of the week, during term time and vacations etc. We understand that such data is held at server level and that CAFRE staff have no access to it. Development of online learning systems can be expensive in both money and time terms. Badly informed decisions can be used as excuses to block or avoid engagement with future developments. It is essential that CAFRE systematically collects additional data on how, how much and when CE6 is being used (to supplement the invaluable information gathered from the existing staff surveys conducted each semester) and exploits this to ensure that policy decisions and innovation are evidence-informed.

Support

The support systems for students whilst on campus seem to be organised on a mainly informal basis. However students tend to value this rather than question it. The relatively small size of the student population and the close working relationships between staff and students promote a more informal approach. However it is clear that there is very little support for students or staff when they are off campus.

Student opinions on the value of the inductions to CE6 vary quite widely; overall it seems that there is opportunity for improvement. As well as the support material built into CE6 students have access to several *Captivate* narrated presentations showing them step by step how to use CE6 in the CAFRE environment.

> The CAFRE Online Learning Team should review the student induction programme for CE6. Current students have found it helpful but there is potential room for improvement.

Training courses are available to new and existing staff but the majority of staff support is done on a one-to-one just-in-time basis following a telephone or email request for help with a particular problem.

The current level of support is limited both by demand (staff and students are not actively seeking support beyond what they already get) and supply (the number of staff available to give support). However the kind of support which will be needed in order to take the use of online learning up to a higher level can be illustrated by the following (very long) list:

- Assisting and supporting teaching staff to develop new e-learning materials
- Being a source of pedagogic innovation and provide advice and support to teaching staff in developing new pedagogic approaches
- Assisting and supporting teaching staff to convert existing teaching materials into a suitable e-learning format (re-purposing existing content)

- Experimenting with and testing new e-learning tools and approaches
- Showcasing innovative e-learning tools
- Developing and managing digital repositories of e-learning materials
- Running staff development seminars, workshops and other events
- Bidding for external funds to support development
- Working in partnership with external developers of e-learning tools and content
- Providing consultancy to internal and external clients
- Providing direction to the development of the CAFRE e-learning platform
- Undertaking market research with internal customers and partners and benchmarking research on leading providers elsewhere
- Linking with other organisations with complementary missions
- Publicising CAFRE's e-learning successes internally and externally
- Providing leadership for e-learning developments
- Helping to articulate a developing vision for e-learning
- Acting as an observatory of e-learning developments elsewhere
- Advising the college in developing its learning and teaching policies
- Provide technical advice and support on e-learning matters

Whilst it may not be possible to meet all these support needs it is clear that a shift in support activities is required to a more proactive and developmental stance.

> Whilst it is clear that the Online Learning Team are providing an excellent and highly valued support service within the current levels and type of use of CE6, it is also the case that taking e-learning development on to a higher level will require a fundamental shift to a more proactive stance centred around staff development, the provision of help with pedagogic design, e-learning innovation and providing senior management with advice. This could be accomplished by relieving existing members of the team from the more mundane and repetitive work (such as creating sections, resetting passwords etc) and leaving them free to capitalise on their experience by concentrating on developmental issues rather system management.

Extending the user base

CAFRE has the laudable aspiration to use online learning to extend its reach to learners in remote areas. We have made some practical recommendations as to how this might be achieved. Achieving the aim will also require the development of new pedagogic approaches which are matched to the context of remote learners.

However extending CE6 provision to off-campus learners brings new support challenges. Off campus learners will want and need to access CE6 from a variety of user owned devices with a diverse range of software already installed on them. Inevitably this will bring new problems. In extreme cases learners may not even be able to start their computers up and will want help provided by telephone or other means.
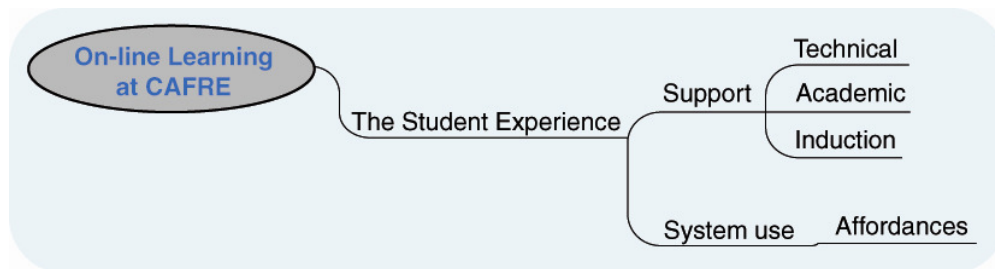
Data collected over an 18 month period from CLN (an US-based company contracted by Coventry University to provide 24/7/365 online and telephone support to e-learning system users) reveals that the most frequent problems encountered were:

- Problems with Java versions
- Wrong browser settings
- Overloaded caches
- Tool bar problems
- Pop-up blockers not being disabled
- Firewall, anti-virus and security settings

Problems using the e-learning system itself were a relatively small category. Arguably none of the issues identified above is the concern of CAFRE since they are direct problems with the way the users have set up their machines. However they do prevent students from making effective use of online learning and lack of concern by CAFRE staff could be taken to be an indicator of the overall quality of CAFRE provision and a manifestation of poor quality service. On the other hand dealing with such issues, even in small numbers, can be difficult and time consuming. Outsourcing is unlikely to be a viable option given the number of users CAFRE will have; but neither is an internally provided service if the majority of issues arise out of hours (as will generally be the case with lifelong learners). The only viable option may be to provide users with a handbook which attempts to anticipate problems and advice on what to do. This would need to be backed up by telephone support within normal working hours.

> CAFRE needs to recognise that extending the learner base via online learning will create new support demands. These will be difficult or not impossible to meet by the current informal methods. These demands will also be different in type from those currently being encountered. Such demands need to be anticipated rather than reacted to and a clear support policy and system established. In part these users will judge the entire reputation of CAFRE on how well their problems are dealt with.

7. The Student Experience of CE6

The Interviews

Overall we talked at length to 81 students from all three campuses and studying on the full range of FE and HE courses. The interviews were conducted on 13 and 14 March 2008 by two separate teams. Nigel Briggs and David Morris visited Loughry and Enniskillen whilst Vida Bayley, Anne-Marie McTavish and Andy Syson visited Greenmount. In each case one member of the team was designated to take notes. In the first team this was Nigel Briggs. David Morris then collated the results from both sets of interviews from the two independent sets of notes. This section of the review summarises what we were told. It is important to note that we here report what students say; we recognise that not everything we were told may correspond with what is actually the case. However perceptions are often as important as the reality. Inevitably some of this might seem to repeat what has gone before, but it is important that the student experience of using CE6 is reported a faithfully as possible.

> CAFRE as an organisation appears to have a very limited knowledge of the views of its students with respect to e-learning. Data are gathered locally but a 'big picture', and especially a central 'big picture' appears to be lacking.

Support

Students stated that the system usually worked. If it did not, they got a technician to help. They had an induction day, including learning about WebCT. However many students were not aware of the meaning or use of significant icons on WebCT. They had access to the library catalogue online, with a link via CE6.

When they cannot log on, the usual approach is to give up and try later. Alternatively, they could contact a lecturer or 'go and find Peter' (technician).

Students had access to, and used, 24 hour facilities in the college which comprise four rooms with computers arranged round the walls. They thought that wireless access 'would be brilliant'. Many of the websites they need to access are blocked, for

example any containing reference to drugs or gambling, both are course topics. CAFRE does, of course, have many students under the age of 18 to whom it owes a duty of care and web site blocking is not unreasonable (it was HE students who raised the issue with us). We understand that blocked sites can be released if approved by the lecturer. This process needs to be simple and quick.

The students also have problems accessing the system from home – often very slow and unreliable connections. There is also, in some cases, very little to actually access.

What students use CE6 for

Many students were not so much negative towards as disinterested in Blackboard. Most do not use it at all during the Practical and Placement parts of their course and only occasionally on the academic side.

One lecturer put all their notes on WebCT; all lecturers use CE6 email. Only 5-10% of lecturers use WebCT other than for mail. One student described it as a 'barren wasteland'. They do not use the discussion forum. There are module online evaluation questionnaires, but not all students complete them.

They had not used WebCT when on placements and could see little purpose in doing so. They maintained contact using mobile telephones. Most had had no access to computers and could see no purpose in using WebCT, other than, perhaps to submit their placement reports online.

Although they were very conscious of the widely different levels of e-learning use amongst their lecturers, they felt that 'it was up to the lecturers' what approaches they used.

The system tells students who else is online, (usually about two students), but they cannot contact them (this function is blocked by ISB).

All students have other email accounts, which they check daily. Some students forward their WebCT mail to their preferred email accounts but they cannot reply to WebCT mail direct from other accounts. Students who do use mail forwarding do not check their WebCT mail regularly.

Students produce their own Personal Development Plans which can be electronic. This includes a self-scored knowledge competency which should lead them to produce an action plan which might include taking the European Computer Driving Licence (ECDL).

HE students make use of WebCT to a much greater extent than FE students

Few of the students used the online environment off campus. All of the students complained about the difficulties with the separate passwords used by the campus network and CE6. The less motivated students appeared to welcome the password problem as this gave them an excuse for doing nothing. The more studious found the

password problem an extreme annoyance, particularly when returned to college after placement break.

Communication was almost exclusively in one direction, from the tutor to the student.

Several students commented that the online environment was particularly useful for them to record their weekly log whilst they were on work experience. However others reported that they were not able to get online access during their work experience so could not use this facility.

The general feeling was that the use of online learning plays a very minor role in their studies and whilst they would welcome addition material being made available online they valued the face-to-face contact much more highly.

What students would like to use it for

Students could see areas where greater use of CE6 would be useful to them:

- Online submission (quite often they come in just to hand in a piece of work – for one this involves a 100 mile round trip)

- Assignment briefs (if anything is lost they have to wait until they are in again, find the lecturer, copy one etc.)

- Have online materials such as videos to see other examples of their practical work – particularly useful in preparation for placement

- A searchable module mail that was used for all communication – mail to staff usually takes 3-5 days for a response

- Discussion Board

- Set format for how modules are set up on Blackboard (the ones that are there (even if the folders are empty) all have different things which makes it awkward to navigate

- Lecture notes to be put up before the lecture to give time for familiarisation and preparation for the subject (some are put up, some are not – no consistency)

- To be able to see grades and track performance

- Access to JANET

- Quizzes on the area being studied

- Diagrams and practical examples being accessible

- Having copies of the audio visual material they watch in class being uploaded

- They would like to see their class notes on CE6, mainly so they would always be available and for revision.

> Students are not fully aware of what CE6 can be used for and the benefits they could gain from greater engagement with it. However they have a number of useful suggestions for ways in which it could be used to help them. Many of these do not require additional resources but are straightforward changes to existing practices. Staff should carefully consider these suggestions for early implementation.

Barriers to use

Students gave us a number of reasons why they did not use CE6:

- Very few of the lecturers put material onto Blackboard – not consistent in what is put into the modules or when
- Often the PCs they have access to on campus are not working[12]
- All assignments were hardcopy hand-ins because they are required to have the assignment stamped
- Did not know that features such as online submission of assignments was a possibility
- Did not know about or use discussion forums for academic work (or other communication)
- Did not use module mail to communicate with lecturers or other students. One comment was that if they wanted to see their lectures/instructors they just went round to see them. (Class numbers are small and the campus is compact and offices and work areas are easily accessible.)
- No wireless access available
- Systems slow and unreliable, difficult to access from home – evidence of '9-5' culture: students were not required nor did they expect to access the system outside of these times
- Multiple passwords and frequent password changes[13] has led to bad practice and frustration
- Students had some training on CE6 but this has not been followed up – they do not know what the system's potential is

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[12] This may be a case of reality and perceptions diverging. Helpdesk and maintenance logs do not provide any supporting evidence. Equally students may not bother to report faults.
[13] Again this problem seems to be perceived rather than real.

Lack of wireless access is a potential inhibitor to further online learning development. CAFRE should assess what the real barriers to providing wireless access to CE6 are and review their policy in this area. Given the extensive nature of the CAFRE campuses it may make good sense to experiment with a limited number of wireless access points in key locations in order to inform policy. In particular the provision of wireless access allows the entire campus to be used as an online classroom or workspace. Wireless access is also encourages students to use their own laptops for study and to promote the redevelopment of traditional open access computer laboratories as "learning lounges" where students can work collaboratively in much more interesting and friendly spaces.

What could it be like?

One group of 14 students on an HND course had an entirely different view and showed what CE6 use could add to their studies. An extract from the interview notes is given below.
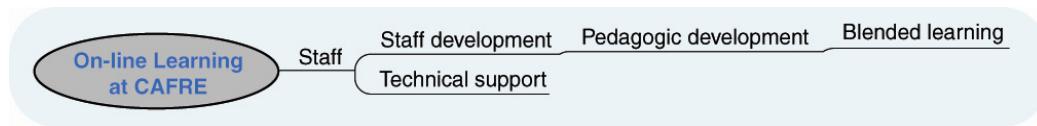
This interview took place in a computer laboratory and so it was possible for the students to show me how they used the online learning environment. They were very enthusiastic about their use of the online learning environment and all agreed that it had significantly enhanced their learning experience and would miss it greatly if it were not there.

Their study web contained much well structured and presented teaching material and was also used for communication and assessment. I was able to see the extensive individual feedback that the tutor had provided on each of the online questions.

The students saw the use of such technologies as an essential part of their preparation for a career in modern agriculture. They reported that they frequently used the system when they were off campus and would like the campus to be equipped with a wireless network so that they could bring their own laptops to college.

Those students who have had the opportunity to benefit from online learning clearly enjoyed the experience, apart from the password problem, and they would like more of their tutors to enhance the face-to-face teaching by using CE6. Learning should be fun as well as challenging, and e-learning can be used to inject excitement into courses as well as to provide basic on-demand information. CAFRE could recruit, retain and engage the interest of learners by supporting the creation of exciting e-learning materials, and then make the flagship developments very visible to all, and especially to the students and potential students.

8. The Staff Experience

The Interviews

We spoke to 31 staff. These came from all three campuses and covered the full range of those involved with CE6 from senior management to newly appointed teaching staff. Staff were interviewed by different members of the project team and notes made. This allowed some triangulation to take place to avoid the evidence being skewed (one way or the other) by individuals with strong views. In a few cases staff were interviewed on more than one occasion. In particular we needed to follow up some areas where we initially felt we did not have enough information.

Specialist Staffing (post April 1 2008)

The following staff resources are dedicated to e-learning:

System Manager: Sharon McLaren 0.4
Flexible Learning Advisor: Jane Picton 1.0
Lecturer: Ronnie Hutchinson 0.2

In addition CAFRE has the following general IT staff:

Programmer Analyst: 1.0
Programmer: 2.0
Technician: 3.0 (1.0 at each campus)

However we understand that the Programmer resource is likely to be reduced.

With such a small group the risks are high. These include:

- Becoming very insular and not keeping up with developments elsewhere

- Staff loss (temporary or permanent)

- Individuals (often enthusiasts or "visionaries" with some knowledge) exercising undue influence over policy and developments (a particular issue if they move on)

- E-learning becoming marginalised as conflicting demands compete for staff time

- With the support staff levels available at the moment it is felt that CE6 could stagnate, with the system being set up and then left to run. With extra staff time there would be opportunity extend CE6 to embrace other e-learning software.

> It is especially important for staff to participate in networks and groups which have common interests. This includes continued active participation in the Celtic WebCT User Group and extending collaboration with partner universities. In this latter case Ulster University has an excellent reputation for innovation in e-learning within a WebCT environment. Ulster has been recognised for this work by being accorded WebCT Institute status. Stronger links with Ulster in the e-learning arena would fit well with the good relationships already built with Ulster in other areas.

The college has done well considering the difficulties of operating an online learning environment in a Civil Service establishment. The support staff are overstretched with the combined tasks of keeping the system running and providing the tutors with the support they need. This is recognised by the majority of teaching staff who have great praise for the service they give, a frequent way of putting this is that "they couldn't do more". The soon to be installed integration between the student record system and CE6 will free up some support staff time but if the usage is to rise above the current level then extra support personnel will be required.

What staff use CE6 for

The majority of the lecturers do not use WebCT. Those that do use it for notes, PowerPoints and quizzes, email, end-of-unit assessments (to assess what the students know, not for examinations) and online module evaluations. Staff also used it for posting notices.

However we identified a number of good examples of more adventurous uses of CE6. We note some of these here to emphasise that good use can be, and is, made of CE6 but that it is not consistent.

In one first year project module on applied and investigative work, the lecturer has placed experimental data on the CE6. The information is team-generated, put into Excel and posted on WebCT. Students work individually on data analysis, using Excel and the guidance notes. The lecturer used to have an external website to perform the same function and CE6 does not do anything extra.

Another member of staff has used CE6 for assessments and for giving links to useful websites. This was time consuming initially, but the students like it. Marking is very quick. She has learned how to use it mainly through 'learning by doing'. There has been no pedagogy-linked training.

Lecturers use it for email, but also use other email addresses of their students. The placement tutor at Loughry has all the approved work placements on WebCT, from

which students can choose, however when they are on placement she contacts them by telephone, not through WebCT.

There appears to be general feeling amongst staff that management see the use of the online learning environment as means of increasing efficiency not quality and that if tutors teach some parts of their courses online they will be given extra face to face contact hours.

One lecturer in garden design has a deaf student in his class. He has found that his practice of uploading his PowerPoint presentations and CAD files in advance of the lecture has enabled all the students to prepare effectively for the class. His study webs also use the assessment tool as a vehicle for learning plant identification.

A lecturer's work with NVQ work place assessors in the field has been greatly facilitated by the creation of a dedicated CE6 web that provides resources, such as photographs of the right and wrong way of doing a particular task as a means of ensuring standardisation of assessment. External verifier's reports are put online so that all the assessors can access and comment on them. In addition videos of sample assessments are used as trigger objects for discussion forums within the assessors' web. This novel use of a study web also provides the work places assessors with access to the various CPD forms that they need to complete.

Another member of staff uses the online learning environment to support her foundation degree classes in horticulture. Learning materials to aid plant identification are provided online and students use them in a formative manner. In addition each student is required to use the discussion forum to provide an in depth plant profile posting from which other students can learn and comment. The discussion forum is also used as a location where students can post their garden history presentations before the actual live event.

Another example of good practice is a study web containing a wealth of online resources presented in an easy to use and interesting fashion. As well as PowerPoint presentations it includes multimedia and the lecturer is experimenting with podcasting for his students. His use of assessment to focus student learning and to provide specific feedback to individual students is very impressive. As was the case with other lecturers that are at the leading edge of online learning in the college he is frequently asked to advise and support colleagues in their use of the system.

> There is plenty of good work in e-learning taking place across CAFRE, and this deserves to be better promoted and made easier to see. More could be achieved if all the units of CAFRE were working in synergy towards a common goal.

What staff would like to use CE6 for

They all agreed it could be useful in a number of ways if they knew how to use it and the things were available:

- If there was a search facility in module mail rather than browsing class list for the specific name to send to

- Knowing how to upload material and create materials within Blackboard e.g. quizzes (at the moment they give their administrator the document and she uploads it for them)

- Instant messaging

- Knowing why the Discussion Board is there

- Gradebook (they had heard about this and been shown it at some point but were not keen as they assumed students could see all the marks, they did not realise Student View only gives a student their own mark)

- Online submission as long as administrative staff were involved (at the moment the administration team take it all in, log it, copy it, distribute it). Recording student grades from coursework and examinations is a long manual process. However the Blackboard Gradebook option was unknown and unused.

- Use of monitoring and tracking facilities

- Would like to add audio and visual materials and website links

- Need examples of good practice and how it could be used

- Consistency in use

- Would like to see access to CE6 made available to the dedicated instructors who take the students for practical tasks – feels that that would give them "an edge".

- Would like sharing of best practice by '"show and tell" sessions

There are some interesting and progressive examples of good use of CE6 by enthusiastic members of teaching staff. On the other hand there are many staff who do not know how CE6 could benefit them or, if they do, need help in devising ways of realising the benefits. The existing good practice should be spread through a proactive programme of "show and tell" activities including short face-to-face workshops and the development of showcase webs.

Professional development

There is no staff development in online pedagogy. There is some support on practical use of WebCT, but this is restricted to how to do things rather than designing

programmes for online learning or blended delivery. All sharing of good practice is informal.

> The next phase of online learning and teaching development should focus on exploiting the existing system to the full. There is little point in replacing a working but underutilised system with another one which may not, in any case, add any significant functionality. Encouraging and enabling staff to use the system effectively requires a structured and well-supported staff development programme to be put in place. This should focus on learning design issues to develop use of the system which goes beyond simple content management and one-way communication.

Barriers to CE6 Adoption

Staff volunteered a long list of barriers to using WebCT:

- All staff work has to be held in 'TRIM'[14].

- Most staff see WebCT as 'a chore'.

- Senior college staff have a low profile at Loughry and Enniskillen and some staff were not sure that they understood how Blackboard could be used.

- There is a fear that some courses may be withdrawn, there is therefore a disincentive for staff to commit additional work to deploy e-learning.

- Technology development staff work with local companies (helping them develop higher technology approaches to their work), but do not join up with the teaching side.

- Communication with technology development staff is difficult (either way) because there is a complex formal system which is bureaucratic. What contact there is tends to go round the formal systems so they meet informally.

- WebCT was initially introduced at Greenmount so there is a 'not invented here' view at the other campuses.

- WebCT 'hasn't added to the student learning experience'. Because of small classes and good student contact 'they don't need WebCT's functions'.

- Time factor- no time to develop extra materials. No time to train and develop knowledge

- Students do not check their emails and cannot reply to them if they do.

- There is little or no drive or direction from senior staff on e-learning.

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[14] Again this is a reflection of misunderstanding about TRIM.

- There is a belief among teaching staff that senior managers do not understand WebCT because they have never used it. As one lecturer put it "I talk about it and he listens".

- There is very little pressure from students to increase the use of e-learning.

- ISB's policies make e-learning development difficult- for reasons of restrictive security, lack of storage and reluctance to risk the systems by making them more open or flexible.

- ISB will not allow wireless access to Blackboard, because of data security policy.

- Feedback from students was that WebCT was not user-friendly

- Staff agreed that unless they started with the pedagogy, there was little added value of using e-learning

- The passwording system is unnecessarily complex

- Many staff believe that if they were to develop and use online materials they would be given extra contact time.

- Not aware of how it could be used

- New staff missed the training and it's ad hoc at best now

- Some staff have six different passwords for different systems they access

- Have been told to put lecture slides on before lecture but reluctance in case students use it as an excuse not to attend lectures

- Not really any training given on how to develop materials)

- There is no training budget

- Some online summative assessments and assignments are planned but tutors are finding it very difficult to find time to develop the online resources in addition to the full workload of delivering face to face courses.

Overall the feelings of many staff feelings can be summarised in the quotes:

> *We've got WebCT in the background.*
> *It's the tail wagging the dog.*
> *It's just going to be an add-on to your lecture.*

> CAFRE needs a clearer vision of the place and importance of e-learning and this vision must be associated with strong leadership, at a sufficiently senior level, to take it forward. Key actions for the leader will be to pull relevant business processes into alignment with the needs of the e-learning vision and to engage the interest and enthusiasm of staff.

An Alternative Perspective

There are several very strong academic staff that are very enthusiastic and are driving CE6 development. The following notes of an interview with one of these illustrates their importance to CE6 development.

He is a very enthusiastic lecturer who clearly has considerable knowledge of computer technology. He has found that both the 18/19 year olds and the mature students take to the online environment well with the mare mature students becoming the more involved.

His general pattern of work is put the learning materials online shortly before the class and then use the discussion forum to build on the concepts. He also uses the discussion forum to set students specific individual exercises which he and other students comment on. He uses the CE6 email system to communicate with his students and sets aside specific hours of the day to be online with his students. Assignments are set and handed in online. The marked work is then returned to the students as .pdf files, again online.

He appears to play a significant, if unrecognised, role in the support of colleagues and students regularly come to him for help and advice on how to use the system. He reports that many staff need convincing that online learning is worth doing especially as staff feel they do not have the time to prepare online materials.

Summary

The level of uptake amongst staff is low. This is probably a result of several factors.

1. The very practical hands on nature of the subjects being taught do not easily lend themselves to be supported by online materials. The staff workload to set up an interesting and effective study web is far greater than would be the case for a more 'bookish' subject.
2. The reported lack of support from senior managers and the concern that using online learning may result in increased contact time, whether this is true or not, does nothing to encourage staff to involve themselves with online learning.
3. The passwording system is perceived by some students as an inhibitor to use of CE6. Student pressure on staff to use online learning can be very effective, but if the students find that they are blocked at an early stage they will never be in a position to encourage staff to use it more.

Appendix 1: List of Staff Interviewed

Seen on 6 March:

Sharon McLaren	CE6 Support Manager and Project Manager for "The Online Learning Project".
Ronnie Hutchinson	Lecturer and Blackboard Support Team
Herbie Jones	Head of Further Education and Chair of the FE Teaching and Learning Committee
Raymond Martin	IT Systems Manager
Ian Titterington	Deputy Director

Seen on 7 March

Dr Michael Mullan	Head of HE and Chair of the HE Teaching and Learning Committee
Nigel Murphy	Head of Education Development and Chair of the Industry Training Teaching and Learning Committee
Martin Dempsey	Programmer Analyst

Seen on 13 March

Finton McCann	Programme Manager, Foundation Degrees
Dominic Gallagher	Lecturer in Business Management
Cormac Doherty	Lecturer in Business and Food Technology
Adrian Saunders	Lecturer in Agriculture
Donna Wilson	Lecturer in Nutrition

Seen on 14 March

Hilary Glasgow	Lecturer in Veterinary Science
Alison Morris	Lecturer in Equine Nutrition
Julia Deardon	Lecturer in Business Management
Kathryn Hazlett	Lecturer in Equine Studies
Catherine Crowley	Head of FE, Enniskillen
Finbarr Daly	Programme Manager for HE, Enniskillen
Joe Henderson	Quality Manager
Jane Picton	Flexible Learning Advisor
Ciaran Mulholland	Lecturer in Amenity Horticulture
Claire Wood	Lecturer in Horticulture
Gavin McQuaid	Lecturer in Agriculture
Kevin Henry	Lecturer
John Harkness	Lecturer

A further five staff wished to remain anonymous.

Appendix 2

Documents Consulted as Part of the Review

Vision for the future of the agri-food industry. DARD. January, 2002.

Vision action plan. DARD. February 2003.

Delivery Strategy Document For the Vision – Developing People Programme
"The Online Learning Project". Online Learning Project Team, CAFRE. June 2005.

Government Statement on Modernisation of DARD. November 2002. Available at:
http://www.dardni.gov.uk/government_s_statement_on_modernisation_of_dard.pdf

Education And R&D In Agriculture And Food Science. Report of Review Panel. (The
O'Hare Report). April 2002. Available at:
http://www.dardni.gov.uk/report_of_o__hare_review_panel.pdf

DARD Strategic Plan 2006-2011.

Developing People Developing Business. CAFRE. 2008

Further Education Prospectus. CAFRE. 2008

Higher Education Prospectus. CAFRE. 2008.

Web sites

Ruralni:
http://www.ruralni.gov.uk

CAFRE:
http://www.cafre.ac.uk

DARD:
http://www.**dard**ni.gov.uk

Appendix 3

The Review Team

David Morris is Director of Higher Education Development for Coventry University and will direct the project. Until December 2004 he was the Founding Dean of Coventry Business School. He was one of the pioneers of online learning in the UK and successfully introduced Web-CT into Coventry University in 1999. Coventry Business School, under his leadership, became one of the very largest users of online learning in the UK and abroad and developed an early MLE known as STiLE (Student Teacher integrated Learning Environment). He also developed the Cable and Wireless Virtual Academy concept which, among other activities, delivers a 100% online Masters course in Communications Management to over 250 students around the world. He retains a major interest in business and management education developments as Professor of Business Education at the University. However his major current task is to develop and implement an organisation wide strategy for e-learning across the university for the next five years. This has resulted in the introduction of a third generation e-learning platform, CUOnline, built on a modular architecture and integrating a VLE, digital repository, an e-portfolio along with a range of sophisticated communication and collaboration tools. In the past 18 months he has successfully bid for £800k of grants to support e-learning development. He is a member of the JISC Learning and Teaching Committee.

He has advised many universities overseas on educational matters, including e-learning. He is a consultant to organisations in Kuwait, China, Dubai, Abu Dhabi, several European countries and elsewhere. David Morris has been Director, Technical Adviser or otherwise involved in a senior capacity in a number of EU funded projects concerned with educational institutional strengthening and staff and curriculum development. He has over 100 publications in business, management and educational matters.

John Tutchings is Technical Specialist in e-Learning Systems at Coventry University. He was the first member of staff of a European University to become a Blackboard Powerlinks accredited developer. As well as experience with Blackboard systems John works with Moodle, WordPress, Elgg, Equella, PebblePad and a variety of other open source and proprietary e-learning software.

Andy Syson is Director of the e-Learning Unit. Andy has long experience in the development and management of e-learning and is nationally and internationally known for his pioneering work on taking WebCT to institution-wide application at Coventry.

Vida Bayley is a Senior Lecturer at Coventry Business School. She is a long time user of WebCT in a variety of modules.

Anne Marie McTavish is also a Senior Lecturer at Coventry Business School. She is an experienced management researcher and frequently uses interviewing techniques.

Nigel Briggs is an Educational Consultant. Until recently he was Principal of Stratford-upon-Avon College. He has been a member of many national and regional

bodies concerned with FE issues including several involved with the development of ICT in education.