MEMBERS OF THE eLEARNING STANDING COMMITTEE

Pro Vice-Chancellor (Teaching and Learning) (Professor Jane Long) - Chair
Nominee of the Chair of the Board (Dr Nick Spadaccini)
Director of Centre for Advancement of Teaching and Learning (Professor Denise Chalmers)
Representative of the eLearning Development and Support team (CATL) (Mr Stephen Sheely)
University Librarian and Director (Information Management) (Mr John Arfield)
President of the Guild (Mr Nik Barron)
Director of Student Services (Mr Jon Stubbs)
Associate Professor Sally Sandover (Co-ordinator of Regional Programs)
Professor Geoff Hammond (Faculty of Life and Physical Sciences)
Mrs Eileen Thompson (UWA Business School)
Dr David Glance, (Director, Centre for Software Practice)
Mr Brian Greene (Strategy and Architecture Manager, ITS)
Dr Chris McDonald (Faculty of Engineering, Computing and Mathematics)

Dr Kabilan Krishnasamy (Executive Officer, Education Policy Services)

By Invitation:

Ms Sue Smurthwaite, Manager, Education Policy Services

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eLEARNING STANDING COMMITTEE MEETING – MONDAY 25TH AUGUST 2008

This is to confirm that the next meeting of the eLearning Standing Committee will be held at 12.30pm on Monday, 25th August 2008 in the Senate Room. This will be a one-hour meeting and will conclude at 1.30pm.

As noted in an email dated 13 August 2008, the primary purpose of this meeting is to provide updates on recent developments and to discuss certain broad issues relating to eLearning.

Dr Kabilan Krishnasamy
Executive Officer
AGENDA

WELCOME
The Chair will welcome Professor Denise Chalmers (Director, Centre for Advancement of Teaching and Learning) to her first meeting as a member on the eLearning Standing Committee.

APOLOGIES
The Chair will record any apologies. Members are reminded that apologies should be forwarded to the Executive Officer prior to the meeting.

ITEM FOR COMMUNICATION TO BE DEALT WITH EN BLOC

1. iTUNES University Australia – Ref F21764

In 2007 UWA became one of the first Australian universities to offer public access to educational materials through iTunes U. iTunes U complements UWA’s ongoing commitment to flexible teaching and provision of educational resources in ways that meet the changing needs of students.

In April 2008, necessary integration processes were undertaken to align UWA with iTunes U. As one of the initial steps, 800 potential threads (individual podcasts) from existing UWA materials held in the Lectopia system were reviewed. Following negotiations and a review of these threads for copyright purposes, 90 threads were made available through iTunes U Australia which was launched recently.

Notably, a second phase of this project has been to investigate how to best use this technology to achieve beneficial outcomes for UWA and its students. The attached report (Attachment A), which is for information only, provides a progress update on the integration process and outlines potential outcomes for iTunes U Australia.

For noting.

ITEMS FOR DISCUSSION

2. WebCT AND BLACKBOARD – RECENT BRIEFINGS TO UWA – Ref F5397

WebCT and Blackboard have been the pre-eminent suppliers of the Learning Management System (LMS), and they have been merged as part of a maturing and centrally supported online learning environment at UWA for some time now.

As an online teaching tool, the WebCT system is used in many teaching areas throughout the University. It is used, for example, to place lecture notes online or to administer the selective release of academic results and other related information. Additionally, it is also used to support more sophisticated teaching models and pedagogy.

On 12 August 2008, Mr Tony Maguire the Asia Pacific Regional Manager (Australia & New Zealand) Blackboard (Australia) Pty Ltd. presented a briefing to UWA. The briefing covered the following issues:

- Project NG (Next Generation)
  - New changes to be introduced to the platform
  - Engagement, Assessment and Openness
  - a view into how client feedback and research is informing the development of the platform
- Institutional Effectiveness
  - Improved student learning and academic effectiveness
  - More efficient assessment and easier accreditation
  - Increased faculty engagement in assessment
- Discussions with Chinese University
  - Collaboration with Australia

A verbal report will be presented at the meeting. Members are also asked to consider the attached progress report (Attachment B) on recent developments on the WebCT at UWA.

For discussion.


By way of a brief background, members may be aware that in April 2007 the eLearning Standing Committee established a small working party, convened by Mr John Arfield, to consider the direction to be followed by the University and to recommend through the Teaching and Learning Committee, for Council approval, policy in the matter of ‘distance education’, ‘online courses’ and ‘blended learning’ for both undergraduate and postgraduate students.

Subsequently, in November 2007 the eLearning Standing Committee considered a discussion paper and proposed policy statement formulated by its working party.

At its meeting on 6 March 2008, the Teaching and Learning Committee considered the report including a policy statement and proposed amendments to the University’s checklists for new courses, programmes and units. The report was endorsed subject to modification in light of the Committee’s discussion.

By R22/08, Academic Council, at its meeting held on 2nd April 2008, resolved to approve the eLearning Standing Committee’s modified report, which reflected the diversity of practice in course delivery. The report enunciated key principles to be taken into consideration when determining a teaching mode. These were that teaching should be conducted in a way that was student-centred, appropriate and effective.

Members may note that Council’s approved report and relevant recommendations relating to ‘distance education’, ‘online courses’ and ‘blended learning’ are currently being reviewed by Education Policy Services with a view to formulating appropriate policy within the university’s approved legislative and policy framework and existing templates.

One of the implementation strategies of the University’s OPP’s (Operational Priorities Plan) primary objective for 2006-2008, which is to extend good teaching approaches and improve learning outcomes, is to “implement an eLearning Strategy to simultaneously support sound pedagogy, reliable access and delivery, and appropriate creativity and innovation. Such a strategy should target, for example, an increase in the availability of online learning materials for students in UWA courses, including postgraduate research.” Members may note that this is being reviewed in the current formulation of the University’s OPP for 2009-2011.

Against the backdrop of this development, the Chair has asked that the eLearning Standing Committee engage in a preliminary discussion on the future directions for ‘Blended Learning’, taking into consideration of the following:

- Resourcing issues
- Workload considerations, and
- Quality of student learning experience
By way of background information for members, the following documents are attached:

**Attachment C**  
Extract of minutes of Teaching and Learning Committee meeting held on 6 March 2008

**Attachment D**  
Extract of minutes of Academic Council meeting held on 2 May 2008

**Attachment E**  
‘Blended learning’ at UWA: a discussion paper and draft policy

**Attachment F**  
University’s Operational Priorities Plan 2006-2008

For discussion.

**4. PROGRESS ON eLEARNING STRATEGY Ref – F9547**

By R11/05 the Teaching and Learning Committee resolved to endorse the terms of reference of the eLearning Standing Committee. One of the terms of reference was “to develop an appropriate eLearning strategy, incorporating good practice approaches to eLearning based both in sharing of existing information and experience between and within faculties, and analysis of useful international trends that best fit the UWA context.”

Since its inaugural meeting in June 2005, the eLearning Standing Committee has set up several working parties to follow through with tasks arising from a range of eLearning related issues. This has often resulted in the production of reports and formulation of relevant policy statements which have been presented through the Teaching and Learning Committee for Academic Council’s approval. These include:

- eLearning Survey (2007)
- Single sign-on or same sign-on environment (2006)
- LL & RS Online Lecture resources (2006)

It is anticipated that the documents and reports produced and issues raised in the discussions during 2006 and 2007 will be used towards the formulation of an eLearning Strategy document.

Members are, therefore, asked to give some thought on a way forward in relation to developing an eLearning strategy that could be disseminated widely across the University.

Members are also asked to consider the attached report (**Attachment G**), entitled *Developing an eLearning Strategy*, which raises a number of questions on a variety of areas.

For discussion.

**5. INFORMAL REPORT FROM THE CHAIR**

The Chair may advise members on any recent issue that is of particular relevance to eLearning and its course of action.
Project Description

In November 2007 The University of Western Australia was approached by Apple to be one of the first universities in Australia to make materials available through the iTunes University portal, an area of the iTunes Store featuring free education content, previously available only to universities in North America. Funding for a limited trial in this project was made available through an LTPF grant with David Glance and CATL.

The iTunes store of which iTunes U is a part was originally designed to distribute music through downloadable podcasts, iTunes U was developed to distribute downloadable educational content for free, worldwide. While this increases the potential audience for these materials it means that access is neither password protected or limited to only UWA staff and students. This highlights a number of issues regarding intellectual property and copyright making it necessary to carefully screen podcasts distributed this way and to ensure that all creators of these materials are aware of how broadly they may be distributed.

In February 2008, 3 UWA staff members from Centre for Advancement of Teaching and Learning, the Centre for Software Practice and the UWA Lectopia group attended a “boot camp” in Sydney induct us on the setup and integration processes necessary to align UWA with iTunes U. On returning to UWA these staff initiated the necessary processes to connect UWA with iTunes U. These basic connection activities were completed by April 2008 with a deadline for populating the UWA iTunes U channel with content by the official launch on the 4th of June 2008.

Staff from CATL and CSP reviewed over 800 potential threads (individual podcasts) from existing UWA materials held in the Lectopia system. After negotiations with the owners of these materials and reviewing threads for copyright purposes, 90 threads were made available through iTunes U Australia on launch day (note the iTunes interface simply provides access to these materials with the podcasts still held on the UWA Lectopia system in locations developed by the UWA Lectopia team for this purpose). These threads covered a range of material including presentations from local lecturers and international guest speakers, student support materials, alumni magazines, university promotional materials and samples of student work in audio, video and text formats. A web interface for the site (icons banners etc) was constructed through consultation with the Website Office. On launch date there was both local and national media coverage. Since the launch, the number of threads offered has increased gradually to 114.

We have now begun the second phase of this project which is to investigate how to best use this technology to achieve beneficial outcomes for UWA and its students. To facilitate this, we will be adding to the materials available and, more importantly, reviewing and evaluating those materials to assess the impact and effectiveness of various forms of content in light of what it takes to
create it. To do this, we will be limiting the amount of material available through iTunes U but varying the form, content, length and style in order to provide a varied set of circumstances to review. We will also be looking at the different levels of resourcing required to use existing materials unedited, to edit existing materials before use, and to create new materials. In addition we will be liaising with the other Australian universities to monitor their sites, provision of resources and usage to inform our developments.

Proposed Outcomes
It is anticipated there will be four major outcomes for this project.

1. UWA will successfully integrate on a small scale with iTunes University Australia and provide a range of material suitable for distribution through the iTunes portal with appropriate branding and acknowledgements.

2. User interactions with the materials distributed through iTunes will be documented, investigated and analysed. Support materials and procedures will be developed on the basis of this analysis to aid future users in developing materials that will make optimum use of the teaching and learning, and other possibilities and opportunities afforded by the iTunes portal.

3. The processes involved in the production and editing of materials will be monitored and documented to provide a clear picture of the investment of time and money necessary for the University to maintain a flow of materials to iTunes University. Guidelines for individual staff and faculties developing materials will also be developed. Similarly the time and effort required to maintain the UWA connection with iTunes University while ensuring an appropriate identity for UWA within iTunes will also be monitored.

4. Drawing on the outcomes above, a report will be generated that examines the advisability of UWA developing and extending its relationship with iTunes University beyond the trialling phase.

Stephen Sheely
Senior Lecturer eLearning
CATL
In semester 2 2007 it had become apparent that the demand on the WebCT system at UWA was growing at such a rate that it would soon outstrip the capacity of the existing hardware architecture to support it. Efforts have been underway since September 2007 to upgrade the system to a point where it could cope with existing and future demands.

The necessary hardware architecture was a complex integration of at least three almost independent layers:

- an application layer,
- a database layer and
- gateway/load balancing layer.

The configuration documents and instructions supplied by the various vendors cover a generic “one size fits all” approach to the installation; however in reality every installation is unique. This means there is inevitably a period of adjustment and troubleshooting as the issues concerning this particular installation emerge and the system is adjusted to accommodate the local demands.

**Application layer and load balancing layers**

By the beginning of semester 1 2008 we had installed a completely new application layer which relied on a load balanced solution using an F5 Big-IP device to spread the load across multiple nodes rather than a single stand alone system. There were some issues for users at the beginning of semester 1 with bedding this system down and fine tuning it to the traffic flows and usage patterns of UWA which resulted in some slowness in the first week of semester. While this was regrettable and was frustrating for some users, it should be noted that overall the system coped with a load roughly twice that which the system had dealt with in 2007 and after the first few weeks, was running considerably faster than in 2007. Had we not made these changes the system as it existed in 2007 would not have coped.

**Database layer**

With the increased speed of the application layer some slowness with the database layer was highlighted. We implemented some temporary solutions to increase the speed of the database layer throughout 1st semester but in order to create a permanent solution we invested in a san array to provide adequate and easily increased database space.

The san array was installed configured and tested through June and July and the WebCT installation was cutover to the san array on 24th of July. We had some sporadic problems with users logging in on the Monday and Tuesday following this cutover but we did a reboot in the background on the Wednesday and these problems have not recurred. With the san array now supporting the multi – node application layer we have completely replaced the
infrastructure that existed in 2007 and have the WebCT production environment on a hardware configuration that theoretically should be able to deal with current loads and foreseeable increases in loads.

We are now working on bringing our Disaster Recovery and test environments in line with our production environment so they can validly mirror what is happening on our production environment. Our DR machines have been installed in the Arts IT machine room in the Social Sciences building (our production machines are currently housed in the IT data centre in the Physics building). We have installed and configured an application layer on the DR machines and are currently installing and configuring Oracle on the DR san array so it mirrors our production setup. Once done and tested we will copy our production database to the DR environment, this will require some brief down time during the mid semester break (15 – 19 September) to synchronise the databases. We should then have an accurate and regularly updated backup system should we ever need it and with the help of the ITS networkers we have established a bridge between the two environments so that we can cutover from one system to the other relatively easily.

Next Steps
Once these hardware upgrades are complete we will then be able to test and install a service pack to upgrade the WebCT software to fix some issues which have emerged most notably problems accessing some elements of sites using some browsers on Mac systems. We would anticipate doing this by early October.

When we have completed this work we will be able to move on to a maintenance footing as regards the infrastructure underpinning the WebCT learning management system at UWA with system upgrades and increases in system capacity (which should now be relatively simple) happening during regular scheduled down times.

Once we are in this maintenance phase we will then be able to focus on rolling out a middleware product which we have been developing which will provide a more user friendly interface to allow staff to perform certain site management tasks. We will also be able to increase our staff support offerings including increased training and more just in time support for staff.

Stephen Sheely
Senior Lecturer eLearning
CATL
12.  **ON-LINE COURSES, DISTANCE EDUCATION, BLENDED LEARNING – REF: F9547**

At the 29 November 2006 meeting of Academic Council it had been noted that while the University offers several on-line postgraduate courses, there was no written policy on ‘distance education’, ‘online courses’ and ‘blended learning’ and other related concepts. It had been resolved by R153(ii)06 to request that the Teaching and Learning Committee (through its eLearning Standing Committee) consider the direction to be followed by the University and recommend, for Council approval, policy in the matter of ‘distance education’, ‘online courses’ and ‘blended learning’ for both undergraduate and postgraduate students.

The eLearning Standing Committee had considered this issue in April 2007 and established a small working group, convened by Mr John Arfield, University Librarian, to further consider this matter and formulate a draft policy.

A discussion paper and proposed policy statement had been considered by the eLearning Standing Committee in November 2007 and members had before them a report, including proposed amendments to the University’s checklists for new courses, programmes and units, for consideration.

At the Chair’s invitation the Chair of the eLearning Standing Committee, Associate Professor Jane Long, and the convener of the working party, Mr John Arfield, briefly introduced the item, paying tribute to other members of the working party, highlighting issues that arose during the working party’s deliberations and focussing on the three main principles outlined in the report.

During discussion there was general agreement with the main thrust of the document in that the focus should be on the best way to teach, including the mode of delivery and that separate principles should not be formulated for online learning, distance education or blended learning. The following main points were also noted:

- A member was concerned that the best way to teach might not be financially supportable and therefore the second point in the policy statement should be amended to reflect that informed decisions would need to be made within the context of available resources. It was noted that “informed” decisions would by their nature include provision of resources, but agreed that this issue would be clarified in the report.

- There was broad discussion on the use of emerging teaching and learning technologies, specifically WebCT, and whether this learning management system was sufficiently robust to support the diverse teaching needs at UWA. It was noted that a number of WebCT-related issues were beyond the control of UWA, and that both ITS and CATL were addressing the difficulties, in consultation with WebCT, as quickly as possible. With the migration to the new version of WebCT – version 6 - in the latter half of 2007 and further increases in server capacity provided at the beginning of 2008, it was anticipated that most glitches would occur in the first two to three weeks of semester. It was further noted that WebCT was the only centrally supported learning management system, but that faculties and schools could use a range of systems including moodle and jellyfish, as a University-wide system was not mandated.

- The University Librarian encouraged members to consider using the Learning Resources System (LRS) for storing teaching and learning resources.

- A member advised that Student Services was not able to provide technical advice to students with regard to online technology and that the report (at G7) would need to be adjusted. It was noted that student support in the use of technology for learning would need to be available and that the University’s support services (ITS), faculties and schools would need to be able to support this need if such a technology was utilised for the purposes of teaching. This reflected back to the need for staff to make informed decisions when selecting a teaching mode.
The Chair sought feedback from the members with regard to endorsing the report based on the Committee’s debate and it was

RESOLVED – 6

that the report from the eLearning Standing Committee on on-line courses, distance education blended learning be modified in light of the Teaching and Learning Committee’s discussion and only the amended version forwarded to the Academic Council for consideration and endorsement.

[Executive Officer’s Note: A copy of the report to Academic Council, showing track changes for the benefit of members of the Teaching and Learning Committee is also available on the website with these minutes at http://www.teachingandlearning.uwa.edu.au/page/74636]

The Chair thanked members of the Working Party for the report.
5. REPORT FROM THE eLEARNING STANDING COMMITTEE ON ON-LINE COURSES, DISTANCE EDUCATION, BLENDED LEARNING – Ref F9547

Members were reminded of the following:

- At the meeting of Academic Council held on 29 November 2006, it had been noted that there was no written policy on ‘distance education’, ‘online courses’, ‘blended learning’ and other related concepts.

- By its R153ii/06 the Teaching and Learning Committee (through its eLearning Standing Committee) had been asked to consider the direction to be followed by the University and recommend, for Council approval, policy in the matter of ‘distance education’, ‘online courses’ and ‘blended learning’ for both undergraduate and postgraduate students.

- The eLearning Standing Committee had considered this issue in April 2007 and established a small working group, convened by Mr John Arfield, to further consider the matter and formulate a draft policy.

- A discussion paper and proposed policy statement had subsequently been considered by the eLearning Standing Committee in November 2007.

- The Teaching and Learning Committee, at its meeting on 6 March 2008, had considered the consequent report including a policy statement and proposed amendments to the University’s checklists for new courses, programmes and units.

- The Teaching and Learning Committee had agreed generally with the main thrust of the report, namely that the focus should be on the best way to teach, including the mode of delivery, and that separate principles should not be formulated for online learning, distance education or blended learning.

- The Teaching and Learning Committee, by its R6/08, had agreed that the report from the eLearning Standing Committee on on-line courses, distance education and blended learning, as modified in light of the Committee’s discussion, be submitted to the Academic Council for consideration and endorsement.

Members had before them a copy of the extract from the minutes of the meeting of the Teaching and Learning Committee held on 6 March 2008 together with a copy of the modified version of the report.

Invited to speak to the report the Pro Vice-Chancellor (Teaching and Learning) (Associate Professor Jane Long) explained that the report, which reflected the diversity of practice with respect to course delivery, had concluded that eLearning should be good learning. It focused on the best way to teach and enunciated principles to be taken into consideration when determining a teaching mode. These were that teaching should be conducted in a way that was student-centred, appropriate and effective.

In addition the report posed useful questions for staff to consider when contemplating modes of delivery as follows:

What are the learning objectives of the unit?
What is the appropriate mix of information transfer and active engagement in the unit?
What should be the extent and nature of contact between staff and students in the unit?
What is the extent and nature of contact between students in the unit?
Finally the report contained a statement of general principles that were recommended to apply equally to all the University’s teaching regardless of the location or the dominant mode of teaching as follows:

1. The University encourages staff to make informed decisions, within the context of available resources, when selecting from the full range of available teaching modes those which provide a learning experience which is student-centred, appropriate and effective.

2. Through its staff training and development programmes the University will support its staff in the acquisition and development of relevant skills, including the use of emerging teaching and learning technologies.

3. Through its provision of technical and physical infrastructure and of resources the University will facilitate the adoption of the full range of teaching modes.

4. Through its student support services, faculties and schools the University will support students to acquire and develop the relevant skills to engage fully with the learning modes which are employed.

In the ensuing discussion the following were amongst the points raised:

In response to a query about whether courses could be comprised entirely of units delivered on-line, it was explained that this was acceptable at the postgraduate level. However in undergraduate courses there must be an element of face-to-face teaching as it was considered that for undergraduate students there was a greater need for support from staff, opportunity to interact with fellow students and exposure to the University experience in general.

It was confirmed that some units offered at Crawley campus were delivered on-line.

A member queried whether on-line learning opportunities had implications for a vibrant campus. In response it was pointed out that consideration of this issue had not been within the committee’s terms of reference. However it had to be recognised that the current generation of students operated in an electronic environment in many aspects of their lives and there were electronic modes of teaching that involved interaction.

Another member asked what checks were in place to ensure that assignments submitted electronically had been completed by the appropriate person. It was explained that, as with hard-copy assignments, this aspect was managed through policy that expressed student responsibilities and liabilities with respect to academic conduct and measures to deal with instances of academic misconduct. In addition, all new students were now required to complete the Academic Conduct Essentials module.

A member asked whether there was a need to express in policy a requirement for absolute checking of a student’s identity and whether the student was definitely the one who had completed the required work of a unit. In response it was stated that this was a very big issue that would require widespread and thorough discussion.

It was pointed out that there had been instances of people sitting examinations on behalf of students even in a supervised situation. Currently there was no failsafe measure to prevent students from doing the wrong thing when it came to assessment.

In relation to how the policy and principles expressed in the report would be disseminated Council was advised that the eLearning Standing Committee would consider this issue.

A member welcomed support for teachers in the use of eLearning technologies as set out in principle 2 of the proposed policy statement, stating that using web technologies to deliver courses could be daunting even for those who were comfortable with information technology
in general. It was noted that training was currently available and that some faculties provided
this in-house.

A member of the working party pointed out that there was no major thrust at this time towards
digital teaching. It was still a relatively expensive way to teach, demanding considerable time
and effort. However if there were sound academic and educational reasons to adopt a
technology for teaching there should be resources available to assist with this.

On behalf of Council the Chair thanked the Pro Vice-Chancellor (Teaching and Learning) and
all who had contributed towards producing a very valuable report.

RESOLVED – 22

to approve the attached report of the eLearning Standing Committee as modified by the
Teaching and Learning Committee including the policy statement and proposed amendments
to the checklists for new courses or programmes and new units.
‘Blended learning’ at UWA: a discussion paper and draft policy

Background

A small sub-group of the Teaching and Learning Committee was asked to prepare, for discussion by the Teaching and Learning Committee and subsequent approval by Academic Council policy in the matter of ‘distance education’, ‘online courses’, and ‘blended learning’ for both undergraduate and postgraduate students.

Definitions

There are many definitions of ‘blended learning’, online courses’, and ‘distance education’.

Although ‘blended learning’ is a term which is sometimes used to describe learning which combines delivery media or instructional methods, its more common meaning, and the one which is used in this document, is the combination - or blend – of online and face-to-face instruction.

Currently the predominant mode of blended learning is the use of a managed learning environment such as WebCT as a supplement to face-to-face teaching. However the policy of UWA is to develop the full transformative potential of e-learning to enable more effective student learning.

‘Distance education’ denotes teaching and learning in which learning normally occurs in a different place from teaching.

‘Online learning’ is an umbrella term used to describe any education or training that occurs online.

The context

The context of the group’s consideration was the perception of all members of the group that:

1. There is a plurality of student needs and circumstances
2. Student expectations are changing
3. Technology extends the range of tools available for teaching
4. Technology enables new, more effective, ways of learning
5. The plurality of tools enables teaching which more closely matches the plurality of student needs and expectations
6. In general the policy issues around modes of learning should address themselves to how they may achieve high quality student learning for all students

Discussion

The University has developed a number of policies relating to teaching and learning. However while considering what the University’s policy of blended learning should
be it soon became evident to the group that although the University has in its 12 educational principles stated what are the educational outcomes for its students it has developed no policy about the means by which those outcomes are to be achieved. Nor does it require in its course approval or evaluation processes any assessment of the means of delivery.

The group could discern no policy distinction that could usefully be made between online, blended, or distance learning and more traditional forms of on-campus delivery. Any policy that is developed can and should be applied equally to all modes of learning. It is the firm view of the group that the University’s policy on teaching and learning should include clear principles on how teaching methods should be selected. These principles should be applied to all teaching modes whether they be traditional or new, class-based or technology-based. They should be used when approving courses and units, and when evaluating them. In all cases the critical issue is not what techniques and tools are used but how they are used.


the ultimate objective of, and test of, teaching is quality student learning;
- quality student learning requires the acquisition and application of learning skills, therefore: - students should be encouraged to learn how to learn, to recognise the processes of their own learning, and to acquire the necessary learning skills and strategies;
- students should be encouraged to be independent, self-directed and self-regulated learners. This does not imply abandonment to their own devices but structured learning experiences which lead to autonomy;
- quality learning is achieved through the deep approach, the key feature of which is understanding of concepts, principles and theories rather than the simple reproduction of information.
- as student approaches to learning are influenced by a number of factors, including their previous educational experience, their cultural background, their perceptions of particular learning tasks and assessments, and discipline contexts, it is important to design and implement curricula that maximise the deep approach;
- the deep approach is encouraged by well-designed active learning tasks: students learn better when they are actively engaged in their learning rather than when they are passive recipients of transmitted knowledge. Problem-based learning is an effective means of active learning;
- the deep approach is encouraged by reflective practice including self-evaluation and understanding of learning processes;
- although the students’ first-year is particularly critical in acquiring learning skills, skills acquisition continues beyond first-year, through all successive stages of university learning;
- students should be assisted to acquire lifelong learning skills.

While this is a valuable guide to student learning it offers little guidance to staff on the principles to be applied when selecting appropriate teaching modes. Following a
review of policies at other Group of Eight universities\(^1\) and extensive discussion we
suggest that these principles should be that teaching at UWA should be conducted in
a way which is:

1. Student-centered
2. Appropriate
3. Effective

**Principle 1 Student-centered**

- **Student characteristics**

While there are clear dangers in oversimplified stereotypes there is no doubt\(^2\) that
there are significant changes in the background and expectations of students. What
are now commonly referred to as “Net-Gen’, or ‘Millennial’ students are
characterized as digitally literate, connected, expecting immediate responses,
 experiential, social, team- and structure-orientated, visual and kinetic, easily
integrating the physical and virtual. They are adept at multi-tasking, orientated to
engagement and experience, and inclined to engage with projects which they
perceive as relevant. They can rapidly shift attention and may choose not to pay
attention to things that do not interest them.

- **Student requirements**

For many students attending University in their formative years as young adults the
needs are for intellectual and social development and a sound grounding in an
academic discipline. But for some older students the needs are for a qualification for
career advancement; for others the need is to acquire or update specialist knowledge.
Such differences should inform the choice of teaching modes.

- **Student expectations**

Many students now have expectations that are moulded by a high degree of
exposure to, and use of, communications technology. Others have no such
background. Students now expect a high level of technology in education as in other
aspects of their lives, and choose online in units designed with a traditional face-to-
face delivery mode. It is now common that a relatively small fraction of students –
half, or even fewer – choose to attend lectures and rely instead on Lectopia and other
online material. This may be for a number of reasons: timetable clashes, work
commitments, preferred learning style, and perhaps even the view that attending a
lecture adds little or nothing to the learning experience.

For this reason, wherever appropriate, the delivery mode should respond to these
expectations. However not all teaching can appropriately be conducted using online
delivery. When this is the case this should be made clear to students before enrolling
in the unit.

- **Cultural and educational background**

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\(^1\) See Appendix 1
\(^2\) See, for example: Educating the Net Generation; Diana G. Oblinger and James L. Oblinger, editors.
The UWA student body is not homogeneous; there is no single student experience and no single preferred mode of teaching. Good teaching will recognise and, as far as possible, accommodate such differences. Information and communications technologies greatly expand the range of tools available to teachers and must, alongside more traditional forms of teaching, be assessed in terms of the appropriateness to the students being taught, the nature of what is being taught, and the objectives of the course.

**Principle 2  Appropriate**

- *Preferred learning styles*

It is now a commonplace of pedagogy that different people learn in different ways and with different preferences between visual, hearing, reading and writing, and kinesthetic.

- *Student locations*

While the majority of the UWA student body study at the Crawley campus, significant numbers are at other sites within Perth, some are at remote locations in the State, and others are located overseas.

- *Student circumstances*

While some students are free to devote all time and energies throughout their university years to studying, living and socializing within the University, many students spend considerable amounts of time in paid employment. Some study while in full-time employment. Some have family responsibilities of various types. Such students are not able to devote all their time or their energies to studying.

**Principle 3  Effective**

While the mere use of a delivery mode does not automatically guarantee any particular outcome each mode has distinctive characteristics which tend to make it particularly suitable in certain learning situations. Technologies can now be used in conjunction with other delivery methods to broaden the range of tools which may be used to achieve student-centered, effective and appropriate teaching. Once the characteristics and distinctive needs of the student group have been assessed the most effective mode can be selected. The following table indicates the main categories of such tools, with current examples:

<table>
<thead>
<tr>
<th>Live in-person</th>
<th>Synchronous virtual collaboration</th>
<th>Asynchronous virtual collaboration</th>
<th>Self-paced asynchronous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-led classroom teaching</td>
<td>Live online learning</td>
<td>Online discussion boards</td>
<td>Online tutorials</td>
</tr>
<tr>
<td>Hands-on labs</td>
<td>Online chat/IM sessions</td>
<td>Listservs</td>
<td>Simulations</td>
</tr>
<tr>
<td>Coaching/mentoring</td>
<td>Conference calls</td>
<td>Blogs</td>
<td>Online self-assessments</td>
</tr>
<tr>
<td>On-the-job training</td>
<td>Video-conferencing</td>
<td>Wikis</td>
<td>Archived webinars</td>
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<tr>
<td>Fieldwork</td>
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<td>Podcasts</td>
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<td></td>
<td></td>
<td></td>
<td>CD-ROMs</td>
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<td></td>
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<td></td>
<td>Lectopia</td>
</tr>
</tbody>
</table>
In selecting the most effective modes questions which should be considered include:

- What are the learning objectives of this unit?
- What is the appropriate mix of information transfer and active engagement in this unit?
- What should be the extent and nature of contact between staff and students in this unit?
- What is the extent and nature of contact between students in this unit?

At the time of approval the likely effectiveness of a unit can only be estimated. Consideration of the appropriateness of the delivery mode should, however, be part of the course and unit approval process. There should also be, as a matter of routine, a review of a unit’s effectiveness, including the effectiveness of its modes of delivery, three years after its introduction.

**Other considerations**

While the choice of any particular mode or modes of delivery can only be determined in relation to the characteristics of the students and the objectives of the course there are certain other practical factors which must be taken into account when assessing what mode to use.

*Access to materials and technology*

In modes which require the use of printed materials students must have fair and equitable access. Where online modes are used students must also have equitable access to the necessary technology. All students must have access to appropriate study facilities.

*Informing students*

Since the mode of delivery, and hence the nature and extent of the engagement required of students, is increasingly a factor in student choice it is essential that before they enroll students be informed of the modes by which a course will be delivered as well as the content of all courses.

*Access management*

Wherever it is necessary to ensure security (e.g. for assessments) appropriate identity and access management infrastructure must be in place.

*Technical infrastructure*

Technical systems and networks must be reliable and robust.

*Support for teachers*

Introducing technology-assisted modes of teaching may be time-intensive. Teachers who wish to use technologies which are new to them must have the necessary advice, training and support. This extends beyond use of technologies themselves to the teaching skills which may be specific to a particular mode (e.g. online facilitation), and to the skills required in successfully constructing a blended course.
Support for students

Students must have a readily available source of advice and support academically and, where online technology is involved, technically. As far as possible all students should have ready access to the full range of Student Services support.

Students must be given consistent and transparent guidance on how they are expected to engage with learning processes and activities.

Copyright

The communication of digital material is subject to the Commonwealth of Australia Copyright Act 1968 (and amendments). Advice on compliance is available from http://www.legalservices.uwa.edu.au/lso/copyright.

More detailed advice and guidance on online learning at UWA can be found on the website of the Centre for the Advancement of Teaching and Learning at: http://www.catl.uwa.edu.au/elearning/online

Policy statement

This policy is a statement of general principles that apply equally to all the University’s teaching regardless of the location or the dominant mode of teaching.

The University encourages staff to make informed decisions when selecting from the full range of available teaching modes those which provide a learning experience which is student-centered, appropriate and effective.

Through its staff training and development programmes the University will support its staff in the acquisition and development of relevant skills, including the use of emerging teaching and learning technologies.

Through its provision of technical and physical infrastructure and of resources the University will facilitate the adoption of the full range of teaching modes.

Through its student support services, faculties and schools the University will support students to acquire and develop the relevant skills to engage fully with the learning modes which are employed.
Appendix 1  eLearning policies in Go8 universities

A search of the web sites of the Go8 Universities returned detailed e-learning policy statements from four: the University of New South Wales, the University of Queensland, the University of Sydney, and the University of Adelaide. The web site of the University of Melbourne has a page “Key Issues for E-Learning Strategies and Technologies, 2007” but access is restricted. It does not have a publicly accessible statement of policy or principles of eLearning.

There is a consistent view in the detailed policy statements that e-learning is not merely a substitute for face-to-face teaching in particular circumstances (such as remote delivery) but is instead a use of technological opportunities that enhance student learning. The consensus view is that the technologies can be used in conjunction with traditional delivery methods to broaden and to enhance learning and to improve learning outcomes by catering to different learning styles. There is no sense in these statements that e-learning is a sometimes necessary evil to be kept in check; rather it offers a suite of opportunities to be used to complement traditional teaching methods. Some illustrative excerpts from the policy statements are given below.

1. The University of New South Wales
UNSW states as one of its eight ‘Learning and Teaching Goals’ that:

“We will be a leader in the provision of integrated online learning opportunities for students on and off campus.”

The preamble to UNSW’s goal notes that:

“Recent developments in technology have presented remarkable opportunities to enhance the student experience. … Whilst we have no intention of being an ‘online’ University, we do believe that we should strive for excellence in the use of online opportunities to improve learning by our students be they on or off campus.”

2. The University of Sydney
The University’s ‘vision’ is:

“To support the University community to enhance the student learning experience and the campus with sustainable learning technologies that promote research-led, active and innovative approaches to learning and teaching.”

Its Information and Communications Technology Office in Teaching and Learning Strategy notes that:

“E-learning is an increasingly significant part of the student learning experience at the University of Sydney. There have been substantial increases in the use of the central eLearning platform over the past two calendar years.”

It has seven guiding principles for e-learning practice, which include:

- Focusing on improving learning outcomes
• Adopting a student perspective on learning and teaching
• Using quality assurance for the purposes of improvement
• Leading and informing through policy creation
• Developing institutional knowledge and skills for use of e-learning technologies

3. The University of Queensland

UQ states that:

“Flexible learning is part of The University of Queensland’s overall strategy to deliver an enhanced, student-centered approach to learning by applying the most effective, flexible and appropriate teaching and learning modes and technologies. The University aims to encourage independence, creativity and problem-solving in students through flexible approaches to learning, to prepare them for the future.

Flexible learning is an overarching approach which emphasises an education where learning opportunities and options are increased and where students have more control over the learning process. It focuses on improving learning outcomes and maximizing student engagement in learning by using the most effective, varied and appropriate teaching and learning modes.

The aim of flexible learning is to broaden the scope of students’ learning interactions through providing a better mix of learning situations. Students are aided to develop new learning strategies through courses which enable and empower them to explore a variety of modes of interaction. These learning strategies should be consistent with ensuring appropriate depth of knowledge, as well as advancing the broad graduate attributes expected at the University of Queensland.”

UQ’s priorities include:
• keeping pace with changing delivery technologies, and facilitating the University community’s ability to access them;
• maximising the potential of online delivery to provide materials and enable group communication.

In seeking to assure quality teaching and learning, UQ aims to:

“Establish and conduct methods of continual self-evaluation directed toward: program improvement; targeting more effective uses of technology to improve pedagogy; advancing student achievement of intended outcomes; improving retention rates; effective use of resources; and demonstrated improvements in the University’s service to its internal and external constituencies.”

Specifically, UQ addresses the following in assessing elements of flexible learning:
• Are technologies used effective in terms of improving pedagogy?
• Are resources easily accessible and used effectively?
• What has been the impact on the physical and human resources of the faculty/school, and of other areas such as the library?
• How are student learning preferences catered for?
• Is lecturer response to student assignments timely? Does it appear to be appropriately responsive?
• How does evaluated student performance compare to intended learning outcomes?
• How have graduate attributes been mapped to flexibly offered programs and courses?
• How successful is the program’s interactive component, as indicated by student and lecturer surveys, comments, or other measures?
• What do results from students’ routine, end-of-course and program evaluations (e.g. TEVALS) demonstrate with regard to overall satisfaction with the experience of flexibly offered programs?

4. The University of Adelaide

The University of Adelaide has an Online Education Service, which notes that:

“Online learning, or e-learning, as it is also referred to, has now become an essential part of University life. Educators need to be properly equipped to meet the challenge and align their teaching methods with the changing learning styles of its learners who are the emerging leaders and change agents of tomorrow. Many of our students have grown up with technology and this has impacted on their preferred ways of learning. Students born between 1982 and 1991 have been described as ‘Net Generation’ learners. They have been described as digitally literate; connected; social; prefer working in groups; achievement oriented; require structure and guidelines; crave interactivity; have short attention spans; are experiential, visual, kinesthetic learners; and prefer working on things that matter.”

The University of Adelaide’s Strategic Plan has as a goal to use:

“Advances in innovative program delivery, such as intensive residential schools, use of online learning, and tailor-made post-graduate coursework programs will ensure that universities are able to target their programs to a disparate range of students.”

Two useful sources


John Arfield, University Librarian

Professor Geoff Hammond, School of Psychology

Dr Nick Spadaccini, School of Computer Science and Software Engineering
1. **TEACHING AND LEARNING**

At UWA, student learning encompasses experiences both within and beyond the formal setting of classrooms, laboratories and lecture theatres. While the goal of maintaining and extending approaches to teaching and learning that will secure excellent learning outcomes for students remains central, ‘student learning’ within this Operational Priorities Plan is used broadly. It reflects the University’s strong commitment to offer students opportunities to learn and develop in a wide range of social and cultural settings. The learning environment at UWA therefore refers also to that large array of sporting, social and cultural activities, and day-to-day life at the University, supported by sections such as the University Library, Student Services, the Guild, the PSA, the Colleges and the UWA Sport and Recreation Association.

For the 2006-2008 triennium priority attention will be given to:

<table>
<thead>
<tr>
<th>Priority Objectives</th>
<th>Performance Indicators / Targets</th>
<th>Implementation Strategies</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Objective:</strong></td>
<td><strong>General Indicators:</strong> Improvement in the teaching and learning indicators:</td>
<td>Contribute to the review of course structures (refer Management section) with a view to establishing clear defining principles and to ensure the ongoing quality of a UWA education. Further develop international benchmarking and quality assurance processes in teaching and learning (e.g. strategic relationships with Penn State, Bristol, Sheffield and Queens; use of NSSE on comparative basis).</td>
<td>Executive: Deputy Vice-Chancellor (Education)</td>
</tr>
<tr>
<td>To improve the quality of the student learning experience</td>
<td>• Student Satisfaction (SURF, CEQ) • Course Completion Rates • Student Retention and Progression Rates • Graduate Outcomes (GDS) • National Survey of Student Engagement (NSSE). (See TL1-10 on the Performance Indicators / Targets Schedule)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operational Objectives:</strong></td>
<td><strong>Specific Indicators:</strong> Improvement in CEQ results on:</td>
<td></td>
<td>Operational: For detailed operational responsibilities, refer to the OPP Implementation Schedules.</td>
</tr>
<tr>
<td>To extend good teaching approaches and improve learning outcomes</td>
<td>• Overall Satisfaction Index- % Agreement • Good Teaching Scale- % Agreement • Generic Skills Scale- % Agreement • Learning Communities Scale- % Agreement.</td>
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</table>

(For detailed operational responsibilities, refer to the OPP Implementation Schedules.)
### TEACHING AND LEARNING (cont...)

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<tr>
<th>Priority Objectives</th>
<th>Performance Indicators / Targets</th>
<th>Implementation Strategies</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| **Operational Objectives:** To extend good teaching approaches and improve learning outcomes (cont…) | Improvement in:  
- SURF Q6- % Agreement  
- NSSE Q14- % Excellent or Good  
- Completions per Separation  
- Student Progress (% load passed).  
Achieving student progression rates (unit pass rates) for offshore and regional students that are comparable respectively to those of onshore and Crawley students.  
*(See TL1-12 on the Performance Indicators / Targets Schedule)* | Implement an eLearning Strategy to simultaneously support sound pedagogy, reliable access and delivery, and appropriate creativity and innovation. Such a strategy should target, for example, an increase in the availability of online learning materials for students in UWA courses, including postgraduate research.  
Increase opportunities for teaching development, including  
- Teaching Fellowships/Scholarships  
- Expand and improve offerings for new and sessional teachers  
- Facilitate access to formal qualifications in tertiary teaching and learning  
- Develop an approach to peer review of teaching practice.  
Further development by the faculties of a focus upon student learning outcomes at UWA, including  
- Outcome statements for all units by the end of 2006  
- Alignment of outcomes with assessment  
- Embedding of generic/transferable skills in courses.  
Develop a stronger University-wide framework for ensuring quality and viability of regional and transnational programs. | Operational:  
For detailed operational responsibilities, refer to the OPP Implementation Schedules. |
### TEACHING AND LEARNING (cont...)

<table>
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</tr>
</thead>
</table>
| To diversify the experience of UWA students | An increase by 2008 in the number of UWA students going abroad to study.  
An increase by 2008 in the number of undergraduate students enrolled in units involving a practicum and/or field work.  
An increase by 2008 in the number of undergraduate students enrolled in languages other than English units.  
An increase by 2008 in the number of undergraduate students enrolled in Indigenous Studies units.  
*(See TL13 on the Performance Indicators / Targets Schedule)* | Further develop practicum, block teaching and field work opportunities for students within undergraduate UWA courses.  
Promote and improve educational opportunities at UWA such as study abroad, including students from DEEWR designated equity groups.  
Increase interaction between onshore international students and domestic students through such programs as Link Week, LACE (Language and Cultural Exchange).  
Improve opportunities and support (including fund-raising to enhance scholarships) across all faculties for UWA students to study abroad or nationally as a component of their course.  
Consider a ‘Language Other Than English’ (LOTE) bonus scheme in relation to UWA admissions and incentives for language study at UWA.  
Develop further options to improve the participation of students in Indigenous studies units.  
Continue and enhance opportunities for visiting academic staff to teach in units at all levels (including undergraduate).  
Continue and enhance opportunities for exchange of academic staff between UWA and other leading universities. | For detailed operational responsibilities, refer to the OPP Implementation Schedules. |
### TEACHING AND LEARNING (cont...)

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Operational Objectives:</td>
<td>Specific Indicators:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To improve access to and participation in UWA courses</td>
<td>An increase by 2008 in the relative participation rates of students at UWA from the DEEWR designated equity groups. <em>(See TL14-18 on the Performance Indicators / Targets Schedule)</em></td>
<td>Review UWA student finance arrangements (Scholarships, bursaries, loans, student employment, etc). Review postgraduate coursework offerings for market demand, content, structure and administration (Refer Management Section of OPP). Develop high demand postgraduate fee-paying courses (Refer Resourcing Section of OPP). Promote and improve access to UWA courses from DEEWR designated equity groups where under represented, e.g. via UniDiscovery, learning links with schools, WISE, UWay and UWA scholarships. Minimise prerequisites via bridging units and expansion of first year learning opportunities. Streamline processes for credit transfer within and beyond the GO8. Introduction of more programs by the Faculties with articulation from TAFE. Improve opportunities for students to combine success in study with achievement and leadership in sport, cultural and community activities. E.g. embedding the Elite Athlete Friendly University (EAFU) agreement across the University. Lobby the Commonwealth government to improve income support arrangements (e.g. Austudy and Abstudy) for students.</td>
<td>For detailed operational responsibilities, refer to the OPP Implementation Schedules.</td>
</tr>
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</table>
### TEACHING AND LEARNING (cont...)

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<th>Performance Indicators / Targets</th>
<th>Implementation Strategies</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Operational Objectives: Specific Indicators:</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>To further develop the links between teaching, learning and research</td>
<td>Extent to which research outcomes impact on student teaching.</td>
<td>Expand the Postgraduate Teaching Internship Scheme. Expand opportunities for research-based learning in undergraduate courses; e.g. introduction of fully-funded research projects for undergraduate students. Further support the development of research skills among UWA undergraduate students. Reduce barriers between teaching and research and career research staff through HR policies and school management practices. Promote teaching opportunities for career research staff.</td>
<td>For detailed operational responsibilities, refer to the OPP Implementation Schedules.</td>
</tr>
<tr>
<td>To improve the student learning environment and provision of facilities and services both within and beyond the classroom</td>
<td>Improvement in the level of student satisfaction reported in relevant surveys on services and facilities provided campus wide, e.g. Library, Student Services and Guild.</td>
<td>Review of student accommodation and collegiate educational opportunities. Faculties to enhance opportunities for interaction in commencing students, e.g. team learning. Improve support for student transition, both domestic and international. Faculties to encourage the provision of dedicated student space at all levels for team/group learning. Faculties to ensure that ancillary fees and charges levied on students are minimised as a matter of policy. Encourage student engagement in the Guild, the PSA and other UWA clubs, societies and activities. Protect the quality of student services, in collaboration with the Guild (including the PSA) and the Sports Association, in light of the Voluntary Student Union (VSU) legislation.</td>
<td>For detailed operational responsibilities, refer to the OPP Implementation Schedules.</td>
</tr>
</tbody>
</table>
Developing an eLearning Strategy

Recently a presentation was given by a representative of WebCT/Blackboard on future plans for its development. Consideration of how the University might wish to react to these plans highlighted the need for a vision and strategy to be formulated for its use the digital environment to support its teaching and learning ambitions. Such a strategy is critical in informing resourcing decisions, in making operational choices, and in constructing an appropriate technical environment to support the University’s teaching and learning objectives. The following questions are designed to prompt discussion of these issues.

Scope

A broad perspective of teaching and learning is being adopted to include all aspects of the students’ experience while they are studying at UWA including their on-campus and off-campus experiences through the use of a learning management system, lectopia, library, student portal, resource repository, enrolment in courses, units and tutorials, access to student support services, access and experience in teaching and learning spaces (both formal and informal).

The vision

- What are the challenges/opportunities that teaching will face in five years time, and what part will technology play in overcoming these constraints?
- What opportunities should the technology offer to improve the quality of teaching and learning in five years time, and 10 years?
- What do we want the student experience to be over the next 3-5 years?
- What teaching/learning/study facilities/online social environment do we want to create that can be supported by technology? What facilities will be provided to students?
- How will technology relate to administration of teaching and learning? (Assessment, e-portfolios, student mobility (cp Bologna), timetabling, room bookings...)
- Imagining an enterprise level teaching and learning vision: What would it look like, what needs to be provided centrally and integrated (with what...?) and what should be left for the faculties to determine?

Planning

- How do we go about thinking and planning for this? Is there a place for scenario planning?
- How and where do we need to be active? Are we facilitators, supporters, enablers, leaders, encouragers, mandators? How active should we be?
- What groups should be engaged in the planning process?

Structures and deployment

- Who will be responsible for providing these facilities and services?
• What degree of variability should there be and where should there be a common standard? 
  (E.g. student email and calendaring, file storage, printing, level of workstation provision). 
  How can this be achieved, and how should it be funded?

• Buy or build? Host internally or externally?

• Centralised or distributed? Quality assurance?

**Technical issues**

• What will these services be, and how will they relate to each other? What are the supporting 
  elements that will need to be in place (content authoring, content discovery and delivery, 
  workflow tools, archives and records requirements, identity management, portal)?

• Interoperability: What common standards and technical architecture are required? What 
  should be done where? (E.g. portal/LMS/LCMS/authentication and authorisation/enquiry 
  and help desk system...)

• Open source and/or commercial products? (For this I think it is not either or but how do 
  decisions get made about which and when?)

• How should we combine structured enterprise systems with the capabilities of the 
  unstructured dynamic ‘Web 2.0’ mobile world?

**Human and pedagogic issues**

• Cutting-edge or minimal? How do we encourage effective learning through the use of 
  technology? How can we combine the best of local innovation with the benefits of common 
  infrastructure?

• What support and advisory services are necessary? What are the training requirements, and 
  how will these be provided for? Training for staff? Training for students?

• What pedagogic improvements are we seeking to achieve (active learning? constructivist 
  learning? Learning communities? Self-paced, self-directed learning? What do we want to 
  make of ‘high tech/high touch’)?

• How might technology support the ‘teaching/research nexus’?

**Budgetary issues**

• What are the costs, and what is the most effective way of maximising the effectiveness of 
  our investment?

• How does eLearning interact with the physical environment/learning spaces?

• Sustainability and oversight/responsibility

John Arfield

18th August 12008