



Technology Enhanced Learning (TEL) guide
A practical guide to managing TEL projects

thinking about using technology for learning?

starting out in technology enhanced learning?

what are the big issues to consider?

what quality issues are involved?

where is this happening in the university?

who can I talk to about my ideas?

“A jargon free accessible guide.
It points you in the right direction
and takes you through the process.”

Dr Rachel Mills, Associate Dean

This guide

Technology is changing how students learn and how we research.

Perhaps you want to use technology to enhance communication or improve student support. You may want create a distance learning activity, a flexibly delivered module or indeed a whole course. You may simply want to find out where to find authoritative information, or to see what support exists for this type of work.

The University is committed to delivering high quality learning and teaching, using technology where appropriate, in order to offer a distinctive Southampton educational experience. Technology Enhanced Learning (TEL), also known as e-learning, is becoming increasingly important to students, teaching staff and the institution.

This guide highlights some of the most important matters to consider. It is intended to help you to tackle the key issues that determine the success of TEL projects and to work on those projects in a considered way. Written with the input of colleagues from around the University, it prompts you to ask important questions and points you to sources of up-to-date knowledge and advice. Technology changes rapidly. This guide is about managing the work in a practical way.

The University supports the use of a variety of TEL approaches for teaching and learning and colleagues are ready to offer their experience and advice. Each person has distinctive skills and specific experiences. No single person will have all the answers you are looking for. Be ready to investigate alternative approaches that suit you and your students' needs in different ways.

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Learning & Teaching Enhancement Unit
March 2010

Please direct further enquiries to lateu@soton.ac.uk

- Find out who to consult about your TEL ideas and plans.
- Suggest that information or links in this document are updated.
- Add, amend or remove your contact details.

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Quality matters – building quality in from the start

To ensure success, build in quality from the start.

Technology enhanced learning and quality

As for any other project, the School is responsible for considering and approving amendments to existing programmes and new units of study.

- **Quality** - apply *quality procedures* that are equivalent to those used in the University for other forms of learning.
- **Management** - *plan and manage* the work carefully, paying close attention to people and process issues.
- **Outcomes** - design learning activities that deliver specific defined *learning outcomes*.
- **Interaction** - consider thoroughly *how students will interact* with the resources, with each other, with tutors and with others.
- **Meaning** - ensure that the activities you design are *meaningful* and clearly introduced.
- **Engagement** - create *smart, simple, engaging* learning activities that students want to use.
- **Fitness** - make resources *fit for purpose*.
- **Technology** - technologies will change, so *think beyond today's technology* and do not let technical matters override pedagogic objectives.
- **Review** - ask students/ colleagues to *review your ideas, designs* and *prototypes* for *sense, consistency, completeness* and against *specification*.
- **Future** - plan for the future, the ongoing *support, maintenance, review* and *enhancement* of your learning resources.

Improving learning and teaching

If you are looking for ways to improve learning and teaching using technology, it is helpful to ask yourself and your colleagues some simple yet pertinent questions at the outset.

- Can you describe exactly what are you trying to improve or change, and why?
- Can you describe what the objective is, i.e. exactly why are you trying to do so?
- Can you describe how the objective is to be reached?
- Can you say why a particular approach to achieving the objective would be the best way to improve it?
- Can you set out, in advance, success criteria so that you know that you have improved it?
- Can you build in opportunities to reflect on whether the changes you have implemented have yielded the intended results?

- At every stage, ask what you and your colleagues would do differently next time.

Strive to maintain everyone's focus on the purpose of change, the potential benefits to the student experience and, for each potential solution, the ease of design, production, student delivery and administration. Take into account ways of making the most effective use of resources.

See what works best for you and your students. You will probably try to avoid:

- adopting a new technology solution simply for its own sake
- adopting a new approach entirely until you have trialled it, had feedback and refined it
- maintaining existing practice simply because of precedent.

When describing this type of activity, the QAA uses the term 'enhancement', saying it is a process that aims to deliver "consistently suitable learning opportunities to achieve learning outcomes". For the QAA, enhancing learning means "enhancing programmes of study, academic support and personal support using deliberate steps".

Each School's [Learning and Teaching Enhancement Review and Action Plan \(LTERAP\)](#) encourages the School to reflect on its achievements and so to consider changes that enhance the student experience. You might find it helpful to look at your School's current LTERAP early on, in order to get a steer on how your School plans to enhance its learning and teaching in the light of the University's [Learning and Teaching Enhancement Strategy \(LTES\)](#).

QAA Code of Practice

The [QAA Code of Practice](#) provides a quality assurance framework to guide the University on maintaining quality and standards. The University is committed to meeting the precepts in the QAA Code of Practice for all forms of learning. Use our Checklist (below) to ensure that your project addresses the precepts related to TEL (referred to by the QAA as e-learning).

The QAA defines learning opportunities as "the combined effect of the programmes of study and academic and personal support for students." When you plan the work, ensure that your plans include appropriate provision of academic and personal support. Consider what this means for campus students, for off-campus students and consider how you can best provide effective support in your context. See the University's [guidance on student support](#).

Checklist for TEL projects

The checklist below is based on Section 2 of the Code: Collaborative Provision, Flexible and Distributed Learning including e-Learning. Consider the approach that you are planning and ask yourself the questions below. Some of these questions apply to fully distance-mode activities, but they apply to smaller projects too.

Note: The QAA does not believe or require technology enhanced learning to have a separate or distinct form of quality assurance (Section 2, para 28).

Introduction:

- Are the arrangements for assuring the quality of provision rigorous, secure and open to scrutiny? (para 16)
- Will your students be disadvantaged in any way, leading to differences in outcome? (para 19)
- Is your provision appropriate for the size of the student group, the location and the mode of learning? (para 24)

Collaborative arrangements:

- Have you considered the requirements of the relevant professional, statutory or regulatory body, since they sometimes have criteria for modes/locations of delivery? (Precept A5)
- Are the financial arrangements with any collaborative partners sufficiently strong to manage any risks effectively? (Precept A7)
- Does the contract with any partner organisation or agent cover the type of provision you are planning? (Precept A10)

Flexible and distributed learning delivery

- Have you clarified the respective responsibilities of any third party programme presenters or support providers in assuring the quality of your provision? (Precept B1)
- Have you made available to students a description of the teaching, learning and assessment methods of the unit or module, and a clear schedule for the delivery of study materials and tutor support? (Precept B1)
- Is the delivery system fit for purpose, with appropriate availability and life expectancy? (Precept B1)
- Have you tested the reliability of the delivery system for your provision and made contingency plans in the event of failure? (Precept B2)
- Is the method for delivery of study materials secure and reliable? (Precept B2)
- Do the materials meet the university's expectations for quality of teaching and learning support material? (Precept B2)
- Does the delivery system take account of the lowest levels of technology available to students? (Precept B2)
- Is the delivery system virus-free and, where appropriate, password-protected? (Precept B2)
- Have you made prospective students aware of the different challenges, opportunities and responsibilities of autonomous learning, including any necessary time commitment and familiarity with technology? (Precept B2)

Learner support

- Have you made plans for student induction that take account of the different challenges, opportunities and responsibilities of autonomous learning? (Precept B3)
- Have you made plans to keep students informed of the support available to them locally and remotely, including the frequency of support,

anticipated response times, technical requirements, ground rules/protocols, requirements for e-attendance/e-contributions; and have you stated which activities are compulsory and which are optional? (Precepts B3, B4)

- Have you provided regular opportunities for inter-learner discussion, collaborative learning and participation in quality assurance, taking account of anonymity? (Precept B5)
- Do the staff providing support to learners have appropriate skills and receive appropriate training and development, e.g. do they have appropriate technological and pedagogical expertise? (Precept B6)
- Have you considered how students will access support services such as pastoral support, academic counselling, library and IT support and careers guidance? (Precept B6)

Assessment of students

- Have you provided assessment briefs that describe how students' performance on individual units will be assessed, e.g. methods, criteria and regulations? (Precept B7)
- Have you planned how formative assessment will take place and how feedback will be provided? (Precept B7)
- Have you considered how you might use electronic media to provide feedback, e.g. feedback as audio file or in instant messaging? (Precept B7)
- Can a student be confident that their assessed work is properly attributed to them, that it is the original work of that student only (unless an alternative mode of assessment is used) and that electronic communication is secure and reliable? (Precept B8)

If you want to know more, see the full [QAA Code of Practice](#) on the QAA site.

QA of employer responsive provision

The QAA indicates that quality assurance of employer-responsive provision should be just as rigorous as that used for traditional programmes, in order to maintain academic standards, saying:

- it is important to maintain the quality of learning opportunities in programmes and awards that are delivered elsewhere
- there may be limitations in providers' ability to ensure that all learners get the same teaching, learning and assessment experiences in the workplace, as those studying on campus
- there needs to be a balance of academic knowledge and professional competence in the award of academic credit.

Quality links

[Quality Handbook \(revised regularly\)](#) - underpins every aspect of the University's activity (it is updated as business is approved by AQSC and Senate).

[Learning & Teaching Enhancement Strategy \(2006-2010\)](#) - describes the University's vision, mission and values regarding to learning, curriculum design, assessment, monitoring, evaluation, organisational and staff development.

[E-learning Enhancement Strategy \(2006-2010\)](#) - describes the benefits, challenges and objectives of technology enhanced learning in the University context.

[Distance Learning \(revised 2007\)](#) - summarises the quality assurance of distance learning and refers to the university's Technology Enhanced Learning Steering & Implementation Group (TELSIG).

[Academic Issues in the Design of Programmes \(revised 2009\)](#) - provides guidance on some of the major academic issues involved.

[Credit Accumulation and Transfer Scheme \(CATS\) Regulations \(revised 2009\)](#) - sets out the credit requirements that apply to all taught programmes in the university and all collaborative provision.

[European Credit and Accumulation Transfer System \(revised 2007\)](#) - sets out the system of easily readable and comparable degrees in Europe

[Guidelines for First Degree Programmes \(revised 2009\)](#) - sets out the expectations for the university's Honours degrees.

[Guidelines for Master's Degree Programmes \(revised 2009\)](#) - sets out the expectations for the university's Master's degree programmes.

[Writing Learning Outcomes for Each Unit](#) - indicates how to write learning outcomes when you start considering/designing new learning activities.

[Developing Students' Key Skills](#) - provides guidance on developing students' key skills including a [Study Skills Toolkit](#) (in Blackboard).

[Developing Students' Academic Study Skills](#) (see Resources for Tutors) - includes guides and resources to help you improve students' academic study skills.

[Providing Effective Student Support](#) - lists the University's specialist advisory services.

[Short Courses](#) - describes the credit-rating and QA principles for credit-bearing, non credit-bearing and professional qualifications.

[Students Studying Away from the University](#) - provides guidance on placement learning, students travelling abroad and students studying off-campus.

[The Equal Opportunities Policy](#) - policy and guidelines intended to ensure equal opportunity and treatment.

[School Powers and Responsibilities](#) - clarifies School responsibility for approving and amending units of study.

Guiding principles – important matters to consider

Introduction to the guiding principles

Whether it is an idea, a plan or an active project at this stage, your technology enhanced learning project will involve many different decisions, each of which will have a consequence upon the nature of the learning solution, the learning design, the production route and the outcome for everyone involved.

It would be very resource intensive to maintain technology enhanced learning guidelines with sufficient detail to cover every circumstance, so we take a pragmatic approach, providing guiding principles and raising matters for you to consider. The guidance is intended to help you make decisions, regardless of the subject matter, intended outcomes, level of study, student body, learning environment or technology. Technologies will come and go, but certain principles can help to guide your thinking as you consider how best to use technology to support your teaching. It is becoming cheaper and easier to try things out, so don't hesitate to try something on a small scale and see how well it works.

There is a wealth of research and studies available about technology enhanced learning. [JISC](#) is a good starting point if you wish to read more. For now, you may wish simply to focus on your course and your students, starting first with your intended outcomes. Consider what you want to be able to achieve more effectively and productively as a tutor. Ask yourself how you can you integrate technology into curriculum tasks in a way that really helps your students to learn. How can you develop your students' digital skills further in order to benefit them individually and as a group? If you integrate technology enhanced learning into your teaching, might that also improve their academic literacy and help them to acquire the information skills they will need to manage their careers?

Choose solutions that best fit students' learning needs and your own academic needs for effective learning design, media production and student administration. If you are starting out on a technology enhanced learning project: start by clarifying your goals and objectives and ensure that you talk to the people who can help you the most. Plan carefully and realistically, and manage actively the issues that arise.

This section of the Guidelines starts with a brief discussion, which we suggest you read *Right Now* (if you are interested, you may want to read the reports to which the discussion refers). The guiding principles follow.

Right now

“Technology is simply part of students' lives”

Some key messages emerged from work undertaken by the *Learner Experiences across the Disciplines* project (JISC, 2009). Its report on the use of learning technology by first year university students (1) found that students increasingly expect strands of technology to run through teaching. When they do come across technology, they expect clear explanations about its purpose and use; however, they are not pushing universities to use particular technologies.

Students will find ways of working that are personal to them and will learn from each other if they find certain skills useful.

The *Learning Literacies in a Digital Age* report (JISC, 2009) reminds us that although students have many sources of support, including family, friends, social networks and online resources, they need intensive support to integrate these into effective personal practices. It suggests that communities of practice/inquiry or learning groups are good ways to support students' digital literacy, because practice takes place within authentic tasks which are of value and interest. (2) "In relation to digital technology itself, the point is not to encourage more technology use but to encourage more insightful, more reflective and more critical choices about technology and its role in learning." (3)

Although students are very often more far advanced than tutors (in their use of Web 2.0 technologies in particular), the *Learner Experiences across the Disciplines* project reminds us that it is dangerous to over-generalise students' experience and skills in technology or assume too much, since they may use very limited features of their devices. And a minority are not confident with technology or do not recognise its value in helping them learn. They continue to value tried and tested methods, particularly face-to-face contact with their tutors and learning with their peers. The challenge for tutors is to take into account rising expectations and the diversity of students' life experiences.

"Tutors have a crucial part to play"

The *Committee of Inquiry into the Changing Learner Experience* (2009) points out that using technology to enliven and enhance learning places new demands on tutors. Its report, *Higher Education in a Web 2.0 World*, highlights the central role that tutors play in designing the student experience. It recommends that institutions focus on developing staff skills: "For staff it means ensuring technical proficiency, reflection on approaches to learning and teaching, and the development of practice, and skills in practice, of e-pedagogy – learning with and/or through technology – so that when they choose to use technology, they can do so effectively." (4)

The latest Web 2.0 tools facilitate communication, collaboration, information creation, participation and sharing, not simply the delivery of content. For tutors accustomed to researching in traditional ways and delivering academic content in traditional forms, keeping pace with these trends is a challenge. Yet tutor skills and confidence are critical to the development of students' information literacy. "The critical question seems to us to be the selection and practice of the pedagogy appropriate to the learning objectives being pursued and also, at this juncture in particular, the communal, participative and creative spirit of the Web 2.0 age." (5)

The report urges tutors to involve students in the development of tools for learning and teaching, finding ways to work together with students in order to capitalise on each other's expertise and capability. If you are inclined to get involved with a technology enhanced learning project, you will find great opportunities for personal and professional development. In addition to discovering how to deploy technology creatively and constructively for student learning, you will develop your digital literacy and be able to make distinctive contributions to educational practice in your professional life.

“British universities are in a tight spot”

Students are growing up in a digital world. When they make the transition into and through university, they experience a new and very distinctive context in terms of technology, scholarship and knowledge. They are asked to adopt a highly critical attitude to information, encouraged to reject the casually-searched information for which they have been accustomed to searching and expected to adapt to the more guarded, precise and measured world of higher education. Although today’s students are adapting to the largely traditional modes of learning that universities offer, the *Committee of Inquiry into the Changing Learner Experience* believes that “the next generation is unlikely to be so accommodating.” (6). Students are expected to become more demanding.

The Edgeless University (Demos, 2009) argues that the tight spot in which British universities find themselves can be a moment of rebirth. “Technology is changing universities as they become just one source among many for ideas, knowledge and innovation. But online tools and open access also offer the means for their survival. Their expertise and value is needed more than ever to validate and support learning and research. Through their institutional capital, universities can use technology to offer more flexible provision and open more equal routes to higher education and learning.” (7)

(1) Hardy, J., Haywood, D., Haywood J., Bates, S., Paterson, J., Rhind, S., Macleod, H. *Learner experiences across the disciplines project. ICT and the student first year experience*. P.4. [online]. JISC, 2009. Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearningpedagogy/learnerexperience>

(2) Beetham, H., McGill, L., Littlejohn, A. *Thriving in the 21st century: Learning Literacies for the Digital Age*. P.4. [online]. JISC, 2009. Available at: <http://www.jisc.ac.uk/publications/documents/learningliteraciesbp.aspx>

(3) Ibid. P.73

(4) Melville, Professor Sir D. *Higher education in a web 2.0 world*. P.7. [online]. *Report of the Committee of Inquiry into the Changing Learner Experience*. Available at: http://clex.org.uk/CLEX_Report_v1-final.pdf [Accessed 28 August 2009]

(5) Ibid. P.38

(6) Ibid. P40

(7) Bradwell, P. *The Edgeless University: why higher education must embrace technology* p.94. [online]. Demos, 2009. Available at: www.demos.co.uk/publications/the-edgeless-university [Accessed 28 August 2009]

Start with intended outcomes

How do you go about the process of designing a technology enhanced learning activity? The starting point is to elicit ideas. Or you may find that an idea simply emerges. It’s important to test, early on, how useful that idea might be. This is where learning outcomes come into play. Focus on the learning outcomes you want your students to achieve: what do you want students to *know, understand* and be able to *do*?

The University expects each Module to have learning outcomes and these will form part of the Specification. But here, we are discussing learning outcomes at a more granular level. When you are designing a new technology enhanced learning activity, it is vital to have a shared understanding with colleagues of why, exactly, you plan to take a particular approach. That way, you can be sure that you have a clear rationale that makes sense to you, that can be justified and so make sense to others.

Keeping learning outcomes in mind throughout the process of designing learning activities helps you to focus on the purpose and applicability of the ideas that emerge as you think how best to shape your teaching. Making the learning outcomes explicit to students helps to make the curriculum clear and provides students with goals to inform their learning. Clear learning outcomes also help students to revise, to record their achievements and to discuss their capabilities with tutors, peers and potential employers. They help guide the process of assessment too.

When you write learning outcomes for specific learning activities it helps you to define and design the most appropriate way of helping students learn. Sometimes it is too easy to pick up on an idea, a new technology perhaps, and to adopt it wholesale without considering how well it meets an intended purpose. Learning outcomes encourage you to question possible approaches and to test ideas against your intention. Write the learning outcomes at the outset, work through them in detail, discuss them with colleagues and then refine them. Although this may seem unnecessary at first (if you have not worked in this way before) it is an invaluable exercise because it forces you to think through your core purpose and so allows you to test out ideas with that purpose firmly established. Learning outcomes should always be more than a list of the body of knowledge you want to impart.

Write in simple language and use the 'second person', i.e. "You will be able to...", as if you are writing the learning outcomes for students and seeking to capture the essence of your intention. You may also find it useful to group learning outcomes into categories, e.g. knowledge (i.e. subject matter); cognitive (i.e. ability to work with subject matter); and practical/professional skills (specific to a particular discipline or professional body).

This is a brief introduction. For more, see the University's [guidance on writing learning outcomes](#). If you are interested in learning outcomes and in developing your teaching in higher education (HE), you may be interested in the university's [Postgraduate Certificate in Academic Practice \(PCAP\)](#). PCAP is a part-time, work-based programme designed to enable academic staff with teaching responsibilities to reach a nationally-recognised standard of competence in HE teaching and learning support. Contact the PCAP Programme Director, Shelley Parr s.j.parr@soton.ac.uk x23784.

Define success criteria

Projects tend to suffer from 'scope creep'. What starts out as a relatively simple piece of work grows in scope, demanding more time, money and resources than was originally envisaged. More people get involved, additional problems emerge and it can feel as if the project is driving you, rather than you driving it. One way of avoiding scope creep is by discussing 'what success would look like' in the first stages and agreeing the standards against which your project

will be judged to have been successful. You can ensure that your success criteria align with a bigger picture, e.g. checking that your success criteria fit with the goals for your own Department or School.

Success criteria can be discrete (did we do X?) or continuous (did we improve Y by 40%?). When you find that other members of the team or other stakeholders seem to have different success criteria, it is worthwhile clarifying any differences and helping the key stakeholders to come to a mutual understanding of 'what will constitute success'. It is far easier to do this at the outset and to assess ideas that emerge during design against mutually understood success criteria, than it is to find that you need to adapt your approach in a major way later on. Success criteria keep people focused on shared goals and help to establish targets for evaluating progress and outcomes.

Rigour and creativity

There is space and opportunity for rigour and for creative thinking when you design any learning activity, but particularly so when you design technology enhanced learning. The latest technologies make it fast to implement changes to learning resources, yet creating most technology enhanced learning solutions can take significant effort. It is important not to underestimate the time involved or the complexities that may emerge when doing the work.

Using technology offers additional ways in which you, as a tutor, can be creative. Not only can you deliver information, demonstrate, discuss, answer questions, pose problems and simulate real world events as you might 'in the classroom', but you can create new ways of learning.

- You will find that you get involved in decisions related to students' location, their use of the internet, use of mobile devices and the benefits of delivering learning via one medium or another (e.g. audio, video, webcam, web conferencing or printed text).
- You will need to consider the attention that they may give to compulsory or optional activities and the new ways in which you might need to monitor and support them.
- You will get involved with deciding how you present the learning solution you decide upon, what it looks and feels like, what the visual interface is, who will be on the audio or video, how they need to present themselves and the topic and so on.
- You will have to consider how, in a technology enhanced environment, you will build in formative assessment activities that you may be more accustomed to handling face-to-face.

In these ways and many others, you will find many opportunities to be creative and to do something new that perhaps you or your School has not done before. The sheer number of creative choices available to you makes it even more important to take a somewhat rigorous approach to managing the work in order to getting it through the design and production process as smoothly as possible. Planning and managing your project actively will help the work run more smoothly, keep it on track and ensure that that important matters are decided upon in the right way and at the right time, all reducing the stress involved in what may be a new area of work.

Rigour and creativity can live side by side when you design, produce and implement technology enhanced learning. If you and your colleagues can find a way to balance the two by utilising creative ideas within a framework of known resources, time and cost you are more likely to have a successful project.

Technology decisions

University colleagues have wide experience in using technology to enhance teaching. Across the university, you will find a diversity of experience and some adherents to particular approaches. A good first step is to find out which approaches are currently being used by colleagues in your School, Faculty and other parts of the university; and to talk to the advisers in the Learning and Teaching Enhancement Unit (LATEU) and iSolutions. See [Contacts](#).

At any one time, colleagues in the university with specialist expertise in technology enhanced learning will be undertaking a variety of tasks: helping colleagues to decide which approach to take, using selected tools and assessing new ones. Some technologies are well established in the university, but you will find that others are used by particular Schools only, while many are used on a one-off basis by individuals with a distinctive need.

- Maintain focus on the pedagogic need, so consider first what you are seeking to achieve and then consider your technology options.
- Assess alternative systems or tools against those distinctive pedagogic needs and the opportunities that technology offers.
- Consider the social issues and barriers that are inherent in using resources of any kind.
- When you look at examples produced via each technology, focus on the nature of the teaching and the type of interactions possible (rather than the subject matter).
- Consider how stable the technology is and the availability of support to help you use it.
- Try to future-proof your work, e.g. by keeping the software code and the content (e.g. the text, the audio) separate so that you can reuse the content, without having to rework it, when new technologies emerge.
- Consider with LATEU and/or iSolutions where the digital media files will be (or would best be) stored within the university's ICT infrastructure; what size they should be; and in which formats they should be produced.
- Use the CHEST software purchasing scheme, via iSolutions Service Line serviceline@soton.ac.uk x25656, to purchase reduced cost software and data resources as required.

Get resources in place

It takes time to design new learning resources, activities and processes and to review and perhaps adjust the ways in which you support and assess students. It is essential to get the right resources in place, at the right time, working effectively and productively. Most projects involve people, process and technology. Of these, we suggest that the most important is people. If you can get the right people in place with the interest, motivation and skills to work effectively together, you will have a sound base to work from and will find effective ways to resolve the process and technology issues that arise.

What skills might you need?

- Subject expertise - to shape the academic content and ensure the student experience is academically sound
- Learning design - to shape the student experience, maximise interactivity and exploit the technology
- Media production - to design and create effective, attractive and easy-to-use graphics, audio, video, visual interfaces
- Editing - to ensure that text on-screen and in-print suits the medium (writing for screen is very different from writing long form)
- Social media - to design collaborative activities that are in keeping with current norms or designed purposefully to differ
- Software - to design, implement, maintain and support any software intensive learning resources
- Evaluation - to review, make recommendations and suggest enhancements.

It is unlikely that all the necessary skills will reside in one person, so consider which skills the people who may be available to you might contribute.

- Who might be interested in making a contribution?
- Do they know what it might involve?
- Can you engage their interest at an early stage?
- Is there a particular aspect of the work that would offer them opportunities for professional development?
- What is their role right now and do they have the time?
- Is their time available when you need it?
- Can time be made available by negotiating and adjusting another part of their role?
- Can they fulfil a specific function on the project (e.g. tester, reviewer, evaluator, technical advice)?

Consider your options for sourcing skills. Cast your net widely and consider involving not only academic or professional colleagues, but other University staff, researchers or students. In order to save academic time, it may be effective to bring in specialists or technicians to undertake routine, repetitive or other technical/production tasks such as scripting, video editing, illustration or digital manipulation of media. If someone can do a piece of work in a quarter of the time you might take yourself, this approach may prove effective in terms of time and cost.

Once you have established availability, involve people in producing the plan of work so that they can shape it with you, so that you can establish together when it is best for them to make their contribution, and what inputs and outputs are likely to be expected. Involving your team in creating a plan is invaluable and a great way to build the team's commitment from the outset. Obtain commitment to an agreed number of days input from the people involved and ensure that others who need to know about their involvement are kept informed, especially if things change.

Define deliverables

You have decided that a piece of work (a project) is going to take place. You are discussing your ideas with others. You have thought about the number of student study hours involved. You have seen some similar work perhaps, and you have a reasonably clear idea of the nature of the learning resources you want to produce. You have started to look at the skills you will need to get the work done and the people who might be able and available to make it happen.

You are starting to consider the outcomes, the content, the media, coherence with other courses or student activities and what the relevant professional bodies or legislation might require. You have started to draw up a plan. You are trying to make reasonable assumptions, to take all the considerations into account, to cost the work, to see what's achievable and by when. You are beginning to realise that some aspirations are easily achievable, some are essential, while some may be 'nice to have' but not essential right now.

This is the right time to start defining the deliverable items (deliverables). Documenting what the deliverables comprise helps you to plan the work. Each deliverable will require contributions from one or more of the people involved. Specifying them helps you and your colleagues to reach a common understanding of the scope and scale of the work and the time that needs to be invested. At this stage you should try to describe each deliverable in terms of 'what it is' rather than 'how it works'.

- Start by describing in precise terms 'what it is' you plan to produce.
- What will it require students to do, how long will it take them and when will they do it?
- How large is it (number of pages, words, screens, chunks of video or audio, student activities or interactions)?
- How complex is it in terms of production, e.g. 50 simple diagrams to be drawn, 10 simple and 5 complex video sequences to be recorded, 40 third-party items to be bought-in, 8 interactive simulations to be developed, one blog to be updated twice a week?
- Will it follow an existing model or exemplar, and if so, what existing content, method or resources can be re-used?
- What technical requirements are there, e.g. will it require students to have web access, a webcam, a particular browser or mobile phone?
- What reasonable adjustment' are you considering, particularly to visual, audio and face-to-face activities to make them easier for all to use?
- Will you have to obtain copyright clearance for any of the material you wish to include?

Creating a specification like this does not preclude changes or additions, but it gives you a baseline. It helps you to see how much a change to the deliverable might impact upon the cost of its production and the time it takes. As you specify the deliverables and consider the best approach to producing them, you may find that you adjust their scope and scale. You will probably adjust the plan too, in order to assure yourself that you are investing the time appropriately in the most important aspects of the work and that you are being realistic. This is all part of creating a good plan. In order to complete the plan, you need to decide what tasks are required and how to go about each one.

Manage the work

Managing a project of any kind is demanding. Let's assume that you have everything set up. You have a clear idea of what you are producing, a specification of the deliverables, appropriate skills available and a plan with which to move forward. You are making a start on the active work of the project. Then things start to shift... someone's availability changes, difficulties arise, one part of the work takes far more time than had been envisaged. It is all part of project work and it needs to be managed.

Active management in this context means:

- not making assumptions – about anything
- keeping in touch with everyone involved, listening actively and working to build good relationships
- asking colleagues about the challenges they are facing and helping them find ways to solve problems
- being open about issues that need to be resolved and inviting suggestions
- being explicit and asking for clarification of terminology that others use in order to reduce misunderstanding
- actively tackling the people, process and technology issues that are having an impact on the project
- being prepared to make decisions in order to get the project back on track
- being ready to change direction if something is not working
- reporting upward on project progress, challenges and successes.

Active management of the issues that arise will make your project more likely to succeed.

Producing TEL – making good choices

Sit forward, lean back, curl up, keep walking

Between 2000-2010, the ‘sit forward’/ ‘lean back’ analogy used to be used to help educators consider whether their teaching might be best displayed on a computer screen (sit forward) or on television (lean back). However, the range of possibilities has grown so fast that today’s students routinely access a wide range of media in multiple places on multiple devices. They may ‘curl up’ with a mobile device or simply ‘keep walking’ as they interact online, perform searches and assess content for its usefulness. Although face-to-face interaction remains very special to students, they increasingly expect to obtain easy access to learning resources and to be able to use them just as easily as they can other applications on the web

The range of options available to educators is immense. When considering your learning design options, as well as considering the learning outcomes you wish students to achieve and the academic content you wish to address, you must consider some aspects differently - perhaps even more carefully.

- Can you adapt content that may exist already in some form or does it need to be produced by tutors (or possibly with students)?
- What form and format is it in currently (e.g. text in a PowerPoint presentation, video in a television programme, video on YouTube)?
- How time consuming will it be to extract or reformat existing content for a different purpose?
- Which media is it most appropriate to use for each part of the learning experience, balancing quality considerations, the amount of innovation and the cost of production?

How do you want students to:

- access and work with learning resources, e.g. readings, case studies, videos, audio files, podcasts, laboratories, simulations or blog?
- communicate, share and reflect, e.g. forum, tutorial, wiki or blog?
- produce work of their own by applying skills and knowledge to a task, e.g. writing a critique or creating and giving presentation?
- participate in real-world and simulated experiences that help them to learn, e.g. placements, laboratories or practice sessions?
- learn together, harnessing their collective intelligence, and how you can you help them do so?
- obtain support that they need, e.g. from a learning guide, calendar of student activities, forum or tutorial?
- participate in formative assessment in order to diagnose their progress and boost their motivation?
- undertake summative assessment, e.g. at the end of a module?
- access resources on certain platforms or devices, e.g.: pre-printed, printed locally by student, computer screen or mobile phone?

Workload

Students' experience of their study workload varies according to their other commitments, their motivation, their abilities and (particularly for distant students) their ability to work independently. It is helpful to distant students if you indicate how much time they should spend on an activity and what is expected of them. Try to allocate 'expected study time' when you are devising new learning resources or student activities and always take into account the complexity of the resources and the thinking time that students need. When you are providing a significant amount of distance learning, vary the pace and provide a week-by-week calendar to help students see what commitment is required each week.

There is a risk of investing significant time and effort in creating 'optional' activities that students may not take up. Make student activities an essential part of learning and integrate it into the total experience, so that students perceive the activities as necessary (not optional) work.

It is generally best to try out new solutions on a small scale first to see how much student interest is generated and assess the effectiveness of the learning. Testing things out with students, as you develop them, will help you discover how much time they may require to participate in new activities that you develop.

Text - It tends to be easier to assess workload when resources are predominantly text-based (using reading speeds of say 100 words a minute), but even with text-based materials, its complexity and the student's ability to read English at speed may have significant impact. It takes about 25% longer to read text on screen than it does in printed page.

Audio-visual - In order to absorb audio and video material properly, it is helpful to assume that students may need to allocate time up to twice the 'length' of the material. There is always an overhead if students have to switch between media or between devices whilst studying, so take that into account too.

Computer-based - It is particularly hard to assess the expected workload for interactive computer-based learning resources. Students cannot flick through material in the same way as with text in order to see 'what is left' to be completed, some will encounter technical difficulties or difficulty in using a new mode of learning and so student time may vary from minimal to many hours. Tutors tend to find the workload for scientific, mathematical and technical subjects particularly difficult to assess, but it is still worth persevering if you want to track the expected and actual student workload in order to make adjustments.

Media

You may be producing new content, adapting existing content or integrating content from different sources. You may be considering shifting from the delivery of content to developing a learning experience where students seek out, share and present content that they have shaped themselves. Whichever it is, when you want to create engaging student-centred learning, you necessarily get involved in choosing the medium or media that are most appropriate to engage your students. You apply pedagogic principles and your own creativity.

What should you take into account when you are trying to choose between teaching via, say, a printed set of notes, an audio recording, a short video, some laboratory work or an online tutorial? Each medium has distinctive features. Your task is to choose the medium or mix of media that suits the learning and teaching requirements most closely.

Currency

When you choose the learning media you intend to use, consider how time-consuming and costly it will be to maintain the currency of the material when things change.

- What will need to occur after the first year's presentation of the course?
- How can you design and produce it so that it is easy and not too costly to update?
- Who will be responsible for keeping it up to date?
- When and how often do you expect it to be updated? Will the skills still be in place in the School/Faculty? If not, how would you bring them in?
- How will you capture specific student feedback that helps you to enhance the material when the updating comes around?
- What are the negative consequences of not keeping the material up to date?

Why video?

Video delivers a sense of realism and actuality. Students can see a situation for themselves, including all the visual, behavioural and other sensory cues that video can capture when it is well produced. You may wish to integrate video with other media so that it becomes part of an interactive learning activity; or you may intend to use a sequence of video relatively independently from other digital assets. Short sequences of video can be used flexibly and integrated with other digital material in many ways, e.g. to enliven a learning activity, to pose real world problems, to prompt reflection on a real-world situation or for a formative assessment.

Existing footage

Existing video material may be available from your School, elsewhere within the Faculty or university, university partners, other educational institutions and other third parties. You will always need to check its suitability, to check who holds the rights for it, to obtain clearance from the rights owner to use the material in the ways you intend and to edit it and/or convert it to the appropriate format for delivery. Pay particular attention to any material you see

on the web. You do not have the right to use it without the explicit agreement of the rights owner. Existing footage, interviews, whole programmes, sequences and short clips can all be sourced by producers or picture researchers who search broadcast, commercial and specialist archives for the material you need. Or you may already know which material you want to use, in which case you need to check the rights clearances, the length of the sequence you want and, by negotiating with the rights owner, establish the cost of using it in the specific ways you intend.

New footage

Sometimes it is appropriate (and may be lower cost) to shoot new footage if you know exactly what you want. As technology has developed, people have become accustomed to viewing lower quality video on computers and to viewing short sequences. Video used to be a high-end medium with high production costs, but things have changed. Tutors and students can use low-cost video-recording devices to capture video in a purposeful way; and edit the results with free or low-cost desktop-editing tools. On the other hand, a new narrative or documentary will usually require professional video production skills for refining the concept, articulating a script and storyboard, planning, production and editing.

Good media producers will want to understand the context of your production (i.e. the course or module), your goals, objectives and the rationale for the ideas you already have. It is their role to ask many questions and to challenge your ideas. They will work with you to refine your ideas, check the rights for third party material, produce a final script, take it into production, produce any video graphics, do a rough (assembly) edit of the footage, perform a final edit and seek your formal approval before producing transcripts and delivering digital video clips in the formats you require. Smaller, simpler, shorter video productions can take a different approach, but always take advice from those who have done it before.

Video sustainability

If video is in documentary/narrative/interview style, and assuming it is edited and more than 1-2 minutes long, it is likely that new footage will need to be shot, edited and inserted. If video is less than 1-2 minutes long, and assuming it is a straightforward recording/demonstration of something self-contained with no little editing, it is likely to have a longer life. However, it may still require new material to be shot if the participants refer to 'current' news/standards/ people/ places legislation etc. that date quickly, or if they themselves sound/ look out of date because of where they are located or how they appear.

Even if the production is done in-house using low cost equipment and in-house staff, updating a video can become a major exercise and it can often be more cost-effective to start from scratch. The audio component of a video may need to be re-recorded again in full if the same voice is not available, or if the same narrator cannot be captured at exactly the same fidelity. Consider recording a separate soundtrack so that you can re-use the imagery with a new updated soundtrack. Avoid long narrative video sequences: they are more time-consuming to script, less easy to get right, less appealing for today's students; and larger in file-size, so more off-putting to download or stream.

Why audio?

Don't underestimate the power of audio used on its own for capturing the ambience of a situation, interviews, conversations, discussions, real-world situations that you can witness and record, the precise nature of sounds, and for imparting emotional resonance from real situations. All of these things can be recorded with ease using low-cost audio-recording devices that are no bigger than a mobile phone or other low-cost specialized recording equipment.

In addition to delivering content in the classroom or online, audio can be used for providing feedback (e.g. audio files); for remote discussion and collaboration (e.g. 'voice-over-IP' such as Adobe Connect), for tutors, students or other participants to record events as they happen (e.g. on mobile devices) or for assessment purposes. Audio is low-cost to produce and typically has smaller file-sizes than video, making it easy to store and distribute and fast to download.

Audio sustainability

Audio tends to have a longer life than video since there are fewer visual and behavioural references. It is easy to record or add a short introduction in text that sets the context for an old audio recording and it is often easy to re-record a sequence of audio to bring it up-to-date if the participants are readily available. But it is still worth considering the expected life of an audio sequence when you plan and record it. You can ask participants to avoid making references that date it unnecessarily, such as referring to "last year", to people whose roles may change or to events that place it in a particular moment in time (unless that is the aim).

Why text?

Students are accustomed to reading and expect text to be a central part of their studies. Writing itself has already changed. In its long form, it is largely becoming a screen-based activity. In its short form, we are increasingly writing using laptops and mobile phones.

Heavily influenced by search technology and the availability of attractive media such as video, audio and images, some students may sometimes be inclined to take shortcuts in their academic study, looking for easy-to-find answers and perhaps reading less than you might expect. With access to an infinite amount of reading material in many forms (and sometimes without sufficient context) it is increasingly important for students to decide what to read and to read critically.

Against this background, the task of writing for students at a distance, writing for online delivery and writing for distance learning places demands upon tutors to write with even more energy, engaging students with even greater clarity of expression. Most writers for electronic media use the 2nd person (eg "Now that *you* have completed this section...") to engage their readers. They write in a highly personal way. When writing for discussion forums, blogs, wikis, we recommend this friendly personal approach. It is also important not to overload readers with large amounts of text on screen. Reduce the amount of scrolling/clicking required, aim for readability. Keep it short, direct and personal.

Some people experience barriers to learning with text, particularly people with disabilities that affect reading and people for whom English is not a primary language. PDFs and Acrobat eBooks provide portable solutions, making text easy to read on the move using computers or devices such as a Kindle. Both allow readers to search for text, copy, paste, print, bookmark, etc. and they can include hyperlinks to points within the text or to other resources. They are not universal solutions though, so seek advice if you are looking to make your text compatible with tools that disabled students may use. The goal is to make your work more readable for everyone.

Yet text also offers distinctive benefits to some students, especially when combined with other media. Consider whether it would be beneficial to offer transcripts of audio or video sequences, to caption them or provide text notes for students to read in support of such sequences. This makes your work more accessible to every student.

Online activities

Collaborative learning

Social life is changing, with people using digital media to connect, communicate and sustain relationships. Social software is increasingly being used in universities, to enable peer mentoring and group support and to promote collaborative learning amongst distant students. Such collaborative learning typically involves activities such as researching and sharing findings, debating and project-work.

Students develop initiative through structured tutor-led activities. Using an online forum in teaching helps students to learn together and can reduce the need for courses to have as much print content. Depending on the nature of the group, collaborative online activity on tasks such as open-ended problem solving is able to enhance the learning experience by engaging students fully with their peers. Tasks that seem to promote learning activity include debate, discussion, 'research then report' and project-based activity.

Integrating online activity into assessment is a key factor in getting students to engage with it. Rewarding online team working helps to avoid uneven levels of participation. It is important, early on, to support those students who are less prepared to take part. This may involve encouraging them to post messages, pose questions and contribute to discussions. It may also involve walking them through the technology and offering support on the 'how' aspects of working collaboratively online.

Successful technology enhanced collaborative learning tends to involve careful planning and structured student tasks. You might decide to ask students to present their views on course topics, critique texts, respond to or summarise others' viewpoints, pose questions to a practitioner in their workplace or produce small group reports. How will you prepare students for doing this type of work using technology? How will you communicate the learning goals and set realistic expectations? Will you make student participation optional or a requirement? Will you link the quality or frequency of students' contributions to assessment?

Although online collaborative learning enhances the learning experience, it must be carefully managed if it is not to result in too high a workload for tutors and students. It may be best to work at a small scale at first, learning the skills of online facilitation with a small group of students before rolling out online collaborative learning to larger groups.

Online facilitation

Online facilitation is a new activity for many people. In order to become more aware of the social, technical and pedagogical aspects of learning at a distance, it is best to learn by doing, e.g. by observing and discussing interactions that you see and participate in online forums. Using forums as an example: join a forum to see how it works, discuss the issues that arise with colleagues who have experience of online facilitation, observe good practice (e.g. note how online tutors encourage active participation) and take note of the things you want to avoid (e.g. being dogmatic or unnecessarily formal).

So how do you make sure that students learn something, stay until the end and enjoy it? When you create a collaborative space for your students (such as a forum), state its purpose clearly and invite questions about how it should be used. Make sure you monitor it regularly, visibly, tactfully and with purpose. Post your own resume at the outset and set clear guidelines for online behaviour. You may decide that students are required to post to a forum a certain number of times. If so, be careful you do not overload yourself or your moderator colleagues. Consider whether you wish or expect students to log in or post periodically. Expecting them to contribute regularly, e.g. a certain number of times per week, can encourage student engagement. Make sure your own interventions are short, focused and that you are equitable in your communication, communicating with students equally (and privately when the need arises). Be aware of intercultural and literacy issues, of students' customary writing practices, of lower level proficiency in English and of your own cultural assumptions.

Forums must have a clear purpose and, as a moderator, you must have a clear intention of what you want and expect from students in terms of their contributions. You can use a forum for a specific purpose at various times during the course. For example, you may design a student activity that takes place on the forum over a period of two weeks. During that two-week period, students may be expected to share information, comment upon each other's ideas, summarise arguments, propose solutions or use the activity to assess gaps in their own understanding. Be creative and design student activities that are interesting for students to engage in and that lead them to learn effectively.

Without clarity of purpose, forums can tend to become places for complaining, musing and chatting without purpose. Take note of the type of activity that you see when students start using a forum. You should encourage participation and open debate, but if the amount of social chat becomes unwieldy, you can legitimately ask participants to transfer it to a purely social forum. Although it may seem to be more time intensive, a social forum can largely take care of itself if you set guidelines and take care to monitor that no negative activity occurs.

Blogs and wikis

Whether you use a blog or a university web page, it is always helpful to write a personal mini-profile and to encourage colleagues and students to do the same. For your students, a personal introduction helps to remove the sense of isolation and anxiety that distant students may sometimes experience and it encourages peer interaction. See LATEU guidance on [blogging in education](#), a [Chemistry case study on blogging](#) and iSolutions guidance on [creating blogs using Blackboard](#).

Writing a tutor blog is not only an accessible way to raise your professional profile amongst academic colleagues around the world, but a great way to keep students up to date with news and updates of various kinds. The way to attract readers to your blog is to update it frequently with relevant items (posts) and links to other websites. Once you start thinking, "Might others be interested in this?" you will get into the habit of selecting and writing interesting helpful posts for your blog. Blackboard has a blog facility or you can create an attractive blog, perhaps using [WordPress](#) (free) which the University itself uses for its own blogs.

Tutors increasingly ask students to write reflective journals. This requires them to conceive, shape and craft their messages or their descriptions of work they are undertaking. Writing a reflective piece in the form of a blog is an ideal format because it also increases students' digital literacy, prompting them to consider (and to manage) their digital identity, i.e. how they wish to be seen in the digital world. Blogging can encourage students to reflect upon their learning, to make links between the various aspects of their study and to draw conclusions about project work, other academic activity and their own learning processes.

Consider the issue of privacy. Bloggers may decide to limit readership of blog to a nominated group of people or to open it up so that anyone could read it. If you or a student writes a blog, you can decide whether to allow your readers to post comments that are visible to other people. Blogging is all about connecting with other people and creating a community of likeminded folk, so most bloggers encourage their readers to post comments. Posting comments on blogs helps academics and students to develop vibrant discussion networks of people with common interests. You can hold discussions privately at any stage and moderate your readers' posts, so (if you or your students have not blogged before) it is not a risky activity.

Make yourself familiar with a few general interest blogs and academic blogs first. See what you like and don't like. Start small and simple by posting news about your own academic sphere, reflect upon what happens and then consider how you might usefully use blogging with your students.

The purpose of a wiki is for it to be a website that can easily be edited by its users. Unlike a blog, which is managed by an individual, a wiki is managed by a group of people who create, adjust and edit each others' contributions. Wikis are therefore used for collaborative writing. Particularly useful for small group activities, students invited to contribute to a wiki have both 'author' and 'editor' privileges and can change the structure of the site as well as edit its content. Contributions are instantly visible. Many students are more familiar with blogs than wikis, so if you develop a wiki for student collaboration, use one yourself

first and make sure that you clarify its purpose and your expectations, just like you would for other student contributions. Blogs, forums and wikis can lead to the spontaneous creation, by students, of support groups that meet online or offline for mutual support. See LATEU guidance on [wikis in education](#), [case studies on wikis](#) and iSolutions guidance on [creating wikis using Blackboard](#).

Making it easy to use

Making adjustments made for disabled students can often benefit all students, helping them to access and use materials more flexibly and creating a more inclusive environment. If the usual way of doing things will substantially disadvantage disabled students, we need to anticipate where problems might arise and make reasonable adjustments from the outset. This might involve adapting curriculum, modifying teaching approaches (i.e. adapting technology enhanced learning, distance learning, lab-work, fieldwork, placements, lectures, seminars or tutorials), adapting facilities or providing alternative forms of assessment.

What is deemed a 'reasonable adjustment' depends on individual circumstances, how practical it is to make an adjustment and the cost of making that adjustment. Note that the cost of making an adjustment relates to the financial resources of an institution as a whole, not the resources assigned to a particular school, course or module. The Disability Discrimination Act, which was updated to cover educational provision in 2001, does not require an institution to do anything that might compromise academic standards.

Accessibility links

The University is a major contributor to professional best practice in accessibility, leading on HEFCE accessibility projects and providing free practical intuitive tools.

- [LexDIS](#) – practical guide to making and using accessible learning materials
- [SyNote](#) - create bookmarks that synchronise with selected points in a media presentation (e.g. audio, video, images, slides, transcripts) and create transcripts too: see the [User Guide](#) and the [project description with access to the final report](#)
- [Web 2.0 accessibility projects](#) and [blog on current accessibility projects](#)
- [Accessibility tools for University of Southampton staff and students on Flash drives](#)
- [University Guidance on Making Reasonable Adjustments \(2009\)](#)
- [JISC TechDis](#) provides resources and advice for practitioners such as [free accessibility tools and Accessibility Essentials Guides](#). These provide step-by-step information on making documents and presentations accessible if you are creating or editing in MS Word, MS PowerPoint, working with PDFs or creating material to read in a number of other formats (such as material displayed via data projector). The Guides are downloadable and available on CD and as printed booklets.

Planning and managing your project – getting things done

A simple method for getting things done

Many people are already ‘accidental project managers’ who get things done effectively. Project management simply offers a structured approach that helps to get things done better.

The [JISC project management methodology](#) is based on the industry standard project management method, [PRINCE2](#). It has been pared down so that it is suitable for managing any project. It is easy to use, either in full or by choosing what suits your own needs. It recognises the ‘people aspects’ of managing projects. This is how JISC describe it:

“Project Management is a structured, 'lifecycle-based' approach to help you do the right things at the right time in order to meet your project goals. The Project Management infoKit serves as an introduction for new project managers and a refresher for those with more experience. It represents a core of good practice that underpins all of our other resources and it is regularly reviewed to ensure it reflects new tools and techniques to make your job easier.”

There are particularly important things to consider when you are working on technology enhanced learning projects. Some may seem obvious, but it can sometime be the obvious that gets neglected.

Creating a realistic plan

Investigate

When you look at learning resources that other people have produced, ask questions about the number of people involved in learning design, production, implementation and support; their skills; and the number of days that they contributed. Work hard to get precise answers to help you create a realistic plan.

Number of days

Assess, with specialists and/or people who have done this type of work before, the number of days that designing and producing your learning resources will take. Ask them to review your plan and adjust it accordingly.

Realism

Take into account your colleagues’ experience of doing this type of work (and how optimistic or pessimistic they may be) when they and you assess the number of days’ work required. Adjust your plan accordingly. Be realistic rather than optimistic to avoid problems later on.

Tracking time spent

Guesswork

How can you know how long something will take if you have never done it before? Don't guess: use whatever experience other people have with similar work.

Elapsed time

Are we talking 'working days' or 'elapsed time'? Clarify, when talking with colleagues, whether you are both referring to the same thing when you discuss 'how long a piece of work will take'. Are you both referring to the number of days and hours work - or the elapsed time that a piece of work will take? Ten days' work done over a month it is still ten days' work, but spread over an elapsed month.

Record time spent

Recording the amount of time that you and your team take is invaluable. The intention is not to 'police' the project, but simply to see how long it takes to produce something, enabling you to plan better for the remainder of the project, or for a future piece of work. Encourage colleagues to record the number of days they spend on each part of the project (as they go) and record your own time too. Don't massage the figures!

Reviewing ideas, plans, prototypes and end products

Review against specification

There are many ways to handle the development of learning and teaching activities. There is rarely a single answer. Before you start though, you will most likely have set out what it is that you are planning to do and how you intend to do it; along with the size, scale, scope and content you are aiming for. However loose this may be, that is your specification.

Briefing reviewers

Brief your reviewers before you ask them to look at the work you have produced. Set out the objectives, aims, assumptions and constraints (and share the specification). Explain why you want them to note down the points they think you should consider changing and give them a format in which they can do this, a simple form where they can note:

1. Section/Item/Page/General Comment (eg *Part 3, first Student Task*)
2. Comment (eg *Doesn't work for me, students won't know how to do this*)
3. Suggestion (eg *Move it to Part 5? Or suggest they form a learning group? Or make it an independent piece of work instead?*).

Ensure that reviewers understand that you want their comments and suggestions, but you are not obliged to implement them (since other people will be commenting too).

New ideas emerge

New ideas will emerge as you develop the work and from the feedback you get along the way. It is easy to shift direction without realising the impact on time and cost, so take care and ensure everyone involved knows that you are changing the project's direction if you decide to do so. Make change a conscious choice, decided upon after reflecting on the pros and cons.

Making changes

Change

A change is anything that requires more work than originally envisaged and planned for. A change may arise because the time needed was underestimated, because someone has an idea that affects the process or the product, or it may come as a suggestion from reviewers or elsewhere. Changes generally cost money (days work and/or elapsed time).

Review impact of potential changes

Make time to assess the potential impact of a change. Ask yourself and your colleagues what would happen if the change were made. Investigate the potential cost (or cost saving). Investigate alternative means of achieving the same goal but by making a different type of change. Go back to the person who suggested the change and investigate what was behind it. Then prioritise the changes you intend to make.

Importance

When you invite people to comment on your work, ask reviewers to indicate the importance of their comments, eg 'Importance 1-3'. This will help you to assess the comments, come to your own conclusions and prioritise the most important ones. You will probably take action on some, defer a decision on others until later, reject some and make adaptations similar to (but lightly different) to the ones suggested.

Project management software

University courses on managing projects are listed in the [Professional Opportunities Booklet](#) available on the HR Staff Development website. Staff Development runs a 1-day introductory project management course. iSolutions runs courses on using MS Project, the industry standard project management tool. MS Project enables you to break down the work into activities, enter the number of days/hours each activity will take, work out what this means in elapsed time and adjust the activities accordingly. Alternatively, it allows you to set an end date and see what is achievable by that date. Even if you simply do a 'work breakdown', it is a really useful exercise that enables you to visualise the interdependencies involved and make decisions accordingly.

Contacts – where can I get advice?

Learning and Teaching Enhancement Unit (LATEU)

A good independent starting point is to talk to the [advisers in LATEU](#). LATEU focuses on achieving excellence in academic practice through curriculum innovation; professional development and guidance; and educational quality and enhancement.

LATEU has a number of staff who will help you to develop your ideas and adopt technology-enhanced learning in a way that meets your teaching goals. They will recommend practical approaches and guide you through the processes involved in designing and producing technology enhanced resources. They can also point you towards other colleagues in the university who have had similar requirements; and to external organisations who provide further guidance, training and support.

At the time of publication (March 2010), LATEU provides the following services related to technology enhanced learning.

- Contributes to Education Committee and to the Curriculum Innovation Programme
- Secretariat services to the [Technology Enhanced Learning Steering and Implementation Group \(TELSIG\)](#), which reports to the Education Committee.
- [Workshops and events](#)
- [Funding opportunities](#)
- [e-Learning Gateway](#), a collection of resources and links
- [Learning and teaching links](#)
- [Blog about technology-enhanced learning](#)
- University mailing lists For example, LATEU manages the University mailing list for the [Association for Learning Technology \(ALT\)](#) and the University is an institutional member of ALT (Adam Warren a.j.warren@soton.ac.uk can add your name to the list on request)
- [Zappers](#), enabling students to give answer to questions displayed in PowerPoint
- [Technology Enhanced Learning Guidelines](#) (these guidelines).

LATEU staff with particular expertise in technology-enhanced learning are listed below.

- Fiona Grindey f.grindey@soton.ac.uk x24421 – technology-enhanced learning, Learning and Teaching Enhancement Fund, Virtual worlds, Secretary to the Technology Enhanced Learning Steering and Implementation Group (TELSIG) and Learning Spaces Strategy Group.
- Mary Morrison m.s.morrison@soton.ac.uk x27453 - Employer Engagement Initiative (Director), employer responsive and co-funded development.

- Shelley Parr s.j.parr@soton.ac.uk x23784 – teaching innovations, using ‘zappers’, PCAP (Director).
- Madeline Paterson m.paterson@soton.ac.uk x23471 - Employer Engagement Initiative (Business Coordinator), management of TEL projects, finding TEL specialists.
- Paul Riddy p.j.riddy@soton.ac.uk x24536 – learning design, technology-enhanced learning, videoconferencing, PCAP (Lecturer).
- Adam Warren a.j.warren@soton.ac.uk x24486 – technology-enhanced learning, blended learning, university systems, LATEU’s representative on the Technology Enhanced Learning Steering and Implementation Group (TELSIG).
- LATEU@soton.ac.uk.

iSolutions

iSolutions is the University’s professional ICT services department. It is a good starting point for finding information about specific learning and teaching technologies that the university supports. At the time of writing (February 2010), iSolutions provides the following services related to technology enhanced learning.

- [e-Learning and Teaching Support page](#)
- [Blackboard](#), the Virtual Learning Environment (VLE) which has facilities for blogs, wikis, podcasts and electronic submission of assignments (e-submission).
- Support for:
 - [QuestionMark Perception](#), a Computer Aided Assessment (CAA) tool
 - [Adobe Connect](#), a web based communication and collaboration tool which allows users to setup and run online meetings
 - Blackboard
- [eLearning Hosted Loan Servers](#) where you can trial new developments.
- [‘Feature request’ process](#) to suggest enhancements or changes to an IT system that iSolutions supports
- [‘Software request process](#) (software requests are authorised by a [nominated person from each School/Department](#))
- Audio-visual equipment to loan and hire.
- [Liaison staff](#) responsible for Schools/Departments.

iSolutions staff with particular expertise in technology enhanced learning are listed below.

- Sam Cole sam.cole@soton.ac.uk x.26241 Blackboard Administrator, e-Submission, Turn It In, Adobe Connect, member of the Technology Enhanced Learning Steering and Implementation Group (TELSIG)

- Matt Deeprise m.deeprise@soton.ac.uk x.23663 Blackboard Administrator, Banner system, Shibboleth, member of the Technology Enhanced Learning Steering and Implementation Group (TELSIG)
- Peter Gibbs p.w.gibbs@soton.ac.uk x71-5082 Information System Manager, Division of Management, Information and Computing
- Pete Hancock p.j.hancock@soton.ac.uk x22595 iSolutions Core Mission Accounts Manager
- Heidi Solheim s.l.solheim@soton.ac.uk x25298 iSolutions Liaison
- Bill Warburton w.i.warburton@soton.ac.uk x22326 Computer Aided Assessment (CAA) Officer, member of the Technology Enhanced Learning Steering and Implementation Group (TELSIG)
- ServiceLine: serviceline@soton.ac.uk x25656.

Library

- Debra Morris d.morris@soton.ac.uk x27208, Library eLearning lead, EdShare project manager

Student Services

- Andrew Dykes a.dykes@soton.ac.uk Assistive Technology Officer
- Mark Jones m.s.jones@soton.ac.uk x23500 Business Development Coordinator

University Projects

At any one time, the university has a number of projects running that relate to technology enhanced learning. Some of the most relevant are listed below.

[LexDIS](#) assistive technology resources, ie making e-learning materials easier to use – click on [Find me some strategies](#) for a valuable list of strategies, techniques and examples.

[E-Assessment in Higher Education](#), formative assessment and assessment of higher order learning outcomes, QuestionMark Perception, Blackboard, EdSpace; interoperability; scale, robustness and accessibility)

[Social Networking for Scientists](#), a project about connecting people and speeding up research projects across disciplines

[LifeGuide](#), enabling researchers to create internet-delivered interventions

[ECS Vision](#), exploring future teaching and learning technology infrastructure

[Links to projects](#) funded by the [Learning and Teaching Enhancement Fund](#):

- Web based maps for spatial learning - using Google maps technology
- The Virtual Chemistry Experience - development and showcase of objects and activities in Second Life for teaching, research and widening participation
- Strengthening Blended Learning in Research Methods - online materials for part of the MSc in Gerontology
- Online Peer Assessment - pilot of peer assessment software
- Itallo – Learning objects for Italian - created using LOCTool for online use

- LawLO – Learning objects for Law - created using LOTool for online use
- eCase – Enhancing Learning Through Computer Assisted Self-evaluation - use of QM Perception for module related assessment
- Developing existing short course ‘Human Responses to Vibration’ - development of blended learning materials
- Adaptive Interactive Multimedia Learning Solution - nutrition medical training tool online
- iTunesU - proposal to populate University of Southampton content for iTunesU presence
- eDrugs - online glossary of drugs
- Experiential Learning Through Business Simulation - computer based blended training with local employers and students
- ePortfolio - online ePortfolio system
- TeamPoll - online tool for teambuilding
- M3 – Massive User Virtual Environment, Moodle and Microblogging, using Second Life, Moodle and Twitter to prepare students before they arrive in UK
- Portus II - Second Life project with Archaeology model of the Portus site in Rome for education
- Simulations in Second life - Medicine are looking at Second Life as a tool for their Virtual Patients project and also as a simulation for students to experience disability
- PGCE Virtual students – use of Second Life for part of the PGCE course
- Enhancing Learner Experiences of Disabled Students - accessibility of Web 2.0 applications
- Preparing for Success in Language Studies - combination of Web 2.0 technologies to enhance international students and language studies.

JISC (Joint Information Systems Committee) services

[JISC](#) (Joint Information Systems Committee) provides independent advice, guidance and resources to UK universities on the innovative use of digital technologies, managing and funding programmes.

[JISC Advance](#) brings together JISC’s services and provides advice to support the innovative use of technology, providing [good practice guides, exemplars, technical and specialist advice](#) (via the services below) to help you find solutions quickly and efficiently.

[JISC e-Learning Programme](#) publishes papers regularly, drawing on projects undertaken across the university sector.

[JISC Digital Media](#) provides advice, guidance and training on the creation and use of digital media for learning, teaching and research. Digital media covers still images, moving images and sound resources.

- [Helpdesk](#): free advice on creating and using digital media, buying equipment etc.
- [Online advice](#): up-to-date advice documents catering for all levels
- [Webcasts and online tutorials](#): e.g. Internet for Image Searching
- [Mailing list](#): on digital media issues
- [Digital media blog](#)
- [Training](#): hands-on technical workshops at all levels
- [Consultancy](#): on the use and creation of digital media

[JISC TechDis](#) provides resources and advice to help practitioners provide accessible and inclusive learning and working experiences.

- [Helpdesk](#): free advice on technology and disability, helping you to make learning more inclusive
- [Resources for learning and teaching practitioners](#) and [resources for other staff roles](#) to use when creating learning content

[JISC Legal](#) provides legal information to prevent legal issues from becoming a barrier to the adoption of information and communications technologies in learning, teaching, research, administration and wider community activities.

[JISC Netskills](#) provides staff development services, helping institutions make effective use of innovative ICT for teaching and learning, research, administration, marketing and other activities.

- [Training on creating e-learning](#)
- [Web2 Guides](#) about social media, RSS, collaborative writing, podcasting and microblogging
- [Training on software products](#)

[JISC Infonet](#) provides resources to help the effective strategic planning, implementation and management of technologies in the education sector. Its resources are particularly useful for if you are planning strategic implementation across a School, Faculty or indeed the University.

- [InfoKits](#) - simple methodologies to help strategic planning, implementation and management of TEL.
- [Analytical tools and techniques](#) for a variety of purposes
- [Events](#) and [workshops](#)
- [Publications](#)

[Intute](#) is a free online service that helps you and your students to find key web resources for learning, teaching and research. [Intute is funded by JISC](#)

[Jorum](#) is a free online repository service providing access to teaching and learning resources for higher education. You register for an account and can

then contribute, search, preview and download resources. Jorum is currently in the process of changing to engage with the open resources agenda and has devised three licensing regimes for the deposit and sharing of learning and teaching materials. [Jorum is funded by JISC](#). The University is signed up for the User Service and the Contributor Service.

HE Academy services

HE Academy support the HE sector in providing the best possible learning experience for all students, providing subject-specific support.

- [Centres for Excellence in Teaching & Learning \(CETL\)](#)
- [24 Subject Centres](#) and [Subject Centre events](#)
- [EvidenceNet](#) promotes and supports evidence-informed practice in HE teaching and learning
- [Resources](#)
- [Supporting teaching and learning](#)
- [Enhancing learning and teaching through technology](#)
- [Open Educational Resources](#)
- [Skills for Scientists](#)

JISC & HE Academy web search service

HE Academy & JISC web search facility

Web search across all HE Academy and JISC websites in parallel, using either [HE Academy search](#) or [JISC search](#).

ALT (Association for Learning Technologies) services

[ALT](#) brings together organisations and individuals interested in TEL. The University is an institutional member. Its mailing list includes news, events, access to papers and articles in the ALT Journal. You may add your name to the mailing list by contacting Adam Warren in LATEU a.j.warren@soton.ac.uk.

Quotations – your colleagues have said...

This is what some of your University of Southampton colleagues say of their experiences ...

What were your lessons learned?

“Allow sufficient time, don’t underestimate”

“Build in quality from the start.”

“Recognise that nothing will be an instant success.”

“The single biggest obstacle is funding for new projects.”

“It’s important to work with colleagues who are keen to use technology and have the support of their line managers to writer content. It’s not just about technology!”

“Simple robust systems work best.”

What would have helped you the most?

“More of a strategic approach within the department (this is now improving).”

“Sufficient resources and a tightly knit team.”

“Access to Instructional Design expertise plus more time/resources to backfill academics, so they could spend more time scripting material.”

“Examples in place to stimulate ideas of online courses at the outset.”

“Help starting this within a budget (limited!)”

What would you say to someone starting out?

“Create a plan first, then worry about the technology.”

“Talk to as many people as possible but don’t be put off by other people’s imperatives on do’s and don’ts – they can only advise you on their own experiences and are unlikely to be familiar with the academic content of your course.”

Consult the people who are going to be expected to use the learning materials before developing them. Don’t second guess what people need – quite often this is very ill-advised.”

“There are plenty of people and resources to access, ask for guidance from people you already know and staff in LATEU are especially helpful.”

“Think big, but create a step-by-step project plan.”

“Start with a pedagogic model, not the technology.”

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