Planning tool

LD_lite is a planning tool that features in ‘Preparing for Blended eLearning’. The tools has been derived from several international studies; a process for tutors to document learning activities, developed in the late 1990s at the University of Strathclyde in the UK (Littlejohn, 2003); a system for documenting effective practice developed by Helen Beetham for the UK Joint Information Systems Committees (JISC, 2005); a method of sequencing activities developed by Ron Oliver and colleagues the Australian Universities Teaching Committee (Oliver et al, 2002); a means of abstracting patterns of activities, developed by Peter Goodyear at the University of Sydney, Patrick McAndrew at the UK Open University and others (McAndrew, et al, 2005); and a simplified interpretation of an international, notational sequence that underpins many educational learning environments and tools, IMS Learning Design (IMS LD), hence the title, ‘LD_lite’.

The LD_lite tool integrates three types of frameworks that capture the details of a course at three different levels. All three parts of the framework can be created and reused independently, or as a three stage process in planning blended learning. This approach reflects the preferences of a number of tutors we have worked with to combine elements of familiar forms of capturing practice into a single framework. In this way the framework gives an overview of a teaching scenario as well as the details of implementation (Falconer and Littlejohn, 2006). Our investigations examined different framework combinations, the most popular being ‘lesson planning’ see Fig 1).

While supporting tutors developing blended learning courses at the University of Strathclyde in the UK, we found that the lesson plan methodology helped tutors to think through their course design (Littlejohn, 2003). The lesson plan framework used at Strathclyde drew upon specific elements from IMS Learning Design (IMS LD): a notational sequence being developed by the international standards organisation, IMS, to underpin the development of learning technology software. IMS LD was initially based on an analysis of a large number of e-learning scenarios by colleagues at the Open University of the Netherlands (OUNL). All these scenarios could be summarised in a single statement: ‘*People* engage in *activities* with *resources*’ (Koper, 2003; Koper, 2004; Koper and Olivier, 2004; Britain, 2004). Therefore, key elements of the IMS LD are:

- The *Activities* or tasks that students complete to attain one or more learning objective(s) or outcome(s). During these activities, students receive *feedback* from a variety of sources (such as peers or tutors);
- People (what IMS LD calls ‘actors’), including *students* and *tutors*, who are assigned roles within these activities (for example moderator, group summariser etc); and
- Resources including *content materials* and *software supports* (discussion boards, groupware etc) required to carry out the activities.

The LD_lite framework considers the context of learning focusing on these key elements: tutor role, student roles, content resources, services resources (e.g. e-tools such as discussion) and feedback, as illustrated below.

The figure illustrates a simple online learning activity designed for a class of distance learning students. To carry out this activity, students are divided into small groups of four. Each group downloads course readings from an electronic learning environment. Students share and compile ideas within an online forum, so all interactions take place online. This type of lesson plan can be used by tutors to think through benefits and drawbacks of using particular learning approaches, resources and e-tools – for example why use online communication instead of face-to-face discussions? The online forum may be useful in allowing learners to review ideas posted by other students. But although this approach may be useful for learners, it may be difficult to manage.

We have held trials of this approach with hundreds of tutors of different disciplines in several countries. They tell us that this is a useful framework for documenting specific learning tasks and reflecting upon how to blend specific activities. Some tutors have used lesson plans as ‘work in progress’ representations that help them think through how to blend a range of factors important to blended learning. Other tutors have used lesson plans to try to communicate ideas and actions

that are often ‘hidden’. This tacit information is often the true essence of good teaching. It’s difficult to embed this sort of information in a lesson plan, so tutors may make it available as a text narrative, sound file or video clip appended to the lesson plan.

Time	Mode	Tutor roles	Student roles	Resources (content)	Resources (services)	Feedback and assessment
Semester 1	Offline	Divide students into groups; introduce students to task				
Semester 1	Online	Initiate a ‘translation’ list on a wiki. Place some words and translations as exemplars (online). Moderate stage 1 discussion (online)	Each student group investigates one piece of evidence for evolution; students upload terms they are unsure about into a ‘translation’. board – then respond to others by providing definitions in their own words	‘Evolution and early development’ article (.doc)	Wiki site for translation	Formative assessment: the meanings of terms; peer feedback on meanings of terms; tutor feedback when terminology is misunderstood
Semester 1	Offline	Give feedback re translations and encourage continued use	Group discussions offline (in class) about evidence. Group agrees on a summary and group summary writer posts this to the wiki	Translations created by students	Wiki	Feedback from peers during group discussion

Figure 1: LD-Lite lesson planning

LD_Lite case study: Workspace wikis in engineering (adapted from chapt 6)

Here is an example of the ways in which a complex learning scenarios can be captured and shared. This example illustrates a solution to a common problem in group design projects - the sourcing, storing and sharing of resources that inform the design. Shared workspace systems allow storage and distribution of a variety of materials useful to collaborative group projects. This case study was provided by course developers from Universities of Strathclyde (UK) and Stanford (USA) to illustrate how students might use wiki-based, electronic learning environment systems to support collaborative knowledge construction. The learning environment used in this scenario, Laulima, is an open-source system, as illustrated in Figure 2.

The students using Laulima were studying Design, Manufacturing and Engineering Management. The class was given a brief for a product design, in this case, a domestic, can-crushing device or a breadmaker. The class was divided into small groups of four students and each group was given one aspect of the design process for initial investigation. Aspects included ergonomics and mechanics. Each group of students sourced and evaluated a wide variety of resources covering their specific area (texts, images, technical data, etc) before uploading the materials to a shared workspace. The students arranged their own resources into an informal shared workspace so they could be accessed, repurposed, reflected upon and reused by other groups. Students

discussed the information from these resources both face-to-face and using electronic communication tools, such as phones and instant messaging.

While defining the problem, students met face-to-face to agree how solutions might be developed and who would carry out which tasks. Task assignment was communicated face-to-face, though a range of tools were available to allow students to communicate this information, for example a ‘shout box’ texting tool (to the right of the screenshot in Figure 2). Some groups of students chose not to use these tools, because they could meet up face-to-face. However project documentation was available via the ‘file gallery’ file database system. While developing a solution to the problem students collected resources from external sources and integrated these with self-generated materials. This process was supported using a database ‘file gallery’ system along with a wiki tool which was used to construct project assignments. Students built, tested and evaluated the prototype design face-to-face, with feedback from their tutors either face-to-face or via the wiki.

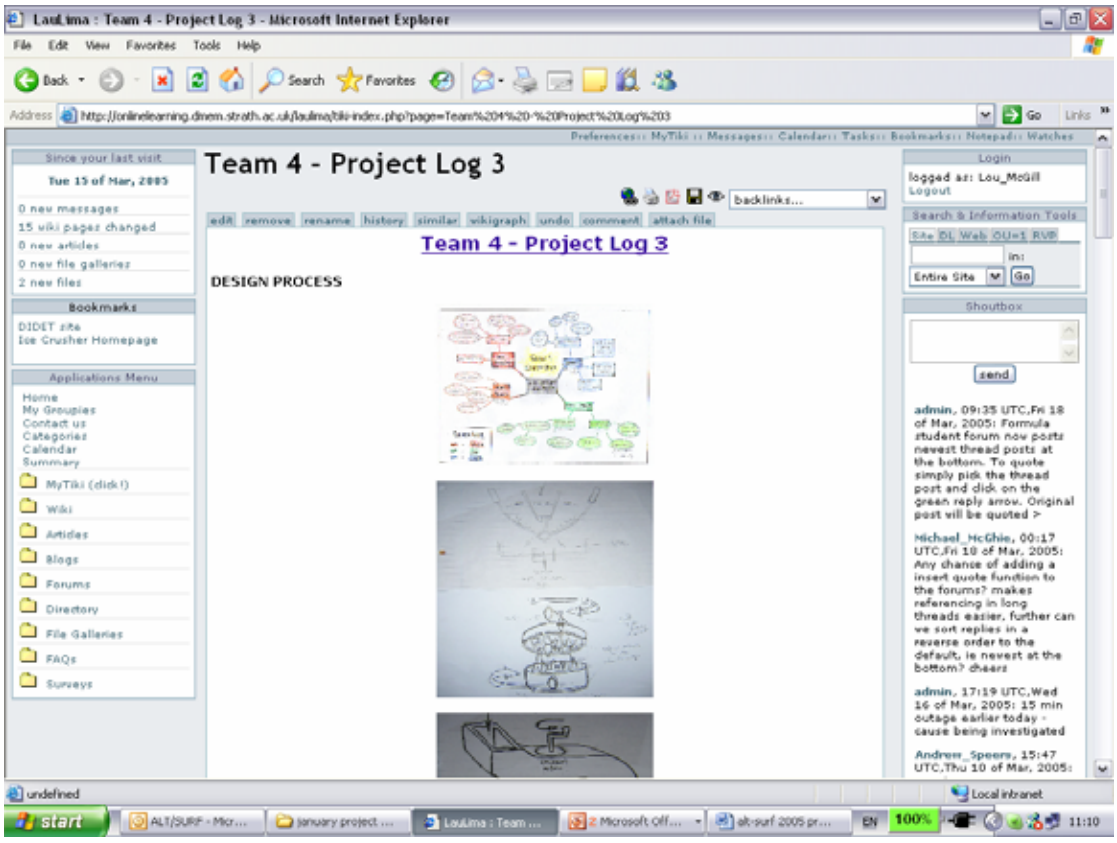

Figure 2: A wiki based learning environment

Evaluations of this learning scenario revealed that the shared online environment gave students a ‘space’ to think through ideas, linking information to create new knowledge. The main problem for the students was rooted in the level of information literacy skills required to work effectively in this sort of environment. Students had to source information, then decide which information sources were most reliable. The students also had to learn about organising information, versioning and so on. They had to learn why sharing and interlinking information resources was useful for their learning. The team leading this initiative built learning literacy skills training into the core of the

module. This was the most effective way to support students in collaborative knowledge construction (Nicol, Littlejohn and Grierson, 2005).

The narrative pattern of this complex scenario is shown in Figure 3, the lesson plan for this scenario is summarised in Figure 4 and the learning design sequence of this scenario is shown in Figure 5. Despite its complexity, the learning design sequence is a useful tool that can be used to reflect on the interplay of the range of learning activities.

Pattern of a product design activities supported by a wiki

Problem:

Student teams working on a design project need to be able to source, store and share resources that inform the design in a well-structured and easily accessible way.

Solution:

Use a workspace wiki-based learning environment that allows students to store and distribute a variety of materials useful to collaborative group projects.

Aim:

To support sourcing, structured storage, sharing and reuse of resources.

Objectives:

By the end of the course you will be able to:

- collaboratively design, develop and test a working prototype domestic device
- source, evaluate and use resources supporting the product design process
- document the design process in a structured and reusable way
- improve your skills in collaborative design and working with others
- improve your information literacy skills

Figure 3: A narrative pattern of the collaborative product design scenario

Figure 4: A lesson plan of the product design activity

Time	Tutor roles	Student roles	Resources (Content)	Resources (Services)	Feedback and assessment
Day 1: Class	Gives class a brief for product design Divides class into groups of 4 students	Study the design brief	Design brief for design of a domestic product		Information and feedback from tutor. Information specialist available to provide information

					management support.
Weeks 1-2: Online and face-to-face	Assigns an aspect of the design process for initial investigation	Collaboratively source and evaluate resources covering each group's area Upload materials to structured, shared space. Reflect and discuss collected information with team members Review resources submitted by other groups	Student-generated resources	Laulima Wiki shared workspaces Communication tools within Laulima E-mail, phones, instant messaging	Feedback from tutor and peers.
Weeks 3-4 Online and face-to-face	Interacts with student groups, offering feedback on selected resources and on the concept maps. Tutor gives additional information resources.	Draw up a product design Design a concept map documenting design process and justifying design decisions	Student-generated resources	Shared whiteboards, instant messaging, VOIP	Feedback from peers, tutor information specialist. Tutor feedback on relevance of resources and concept mapping. Specialist feedback on sourcing and managing resources
Weeks 5-6 Face-to-face and online	Tutor interacts with student groups, in class and via Laulima, and gives feedback on potential solutions.	Develop solution Plan implementation of solutions and division of roles Integrate new materials with existing resources	Student-generated resources	Communication tools within the Laulima File gallery database system within Laulima Wiki	Feedback from peers and tutor. Tutor feedback focused on proof of concept prototype.
Weeks 6-12 Face-to-face and online	Tutor interacts with student groups. Tutor feedback on prototype development	Build, test and evaluate the prototype design		Wiki	Assessment via the wiki, face-to-face presentation and working demonstration of prototype

LDLite template
Objective:

Time	Mode	Tutor Role(s)	Student Role(s)	Resources (Content)	Resources (Services)	Assessment Feedback

LDLite template
Objective:

Time	Mode	Tutor Role(s)	Student Role(s)	Resources (Content)	Resources (Services)	Assessment Feedback