

# INTERACTIVE E-LEARNING DEVELOPMENT WORKSHOPS

Dawn Leeder  
*University of Cambridge, UK*  
*dcl25@cam.ac.uk*

## ABSTRACT

The Centre for Excellence in Teaching & Learning in Reusable Learning Objects (UK) and its precursor, the Universities' Collaboration in e-Learning have, since 2002, developed a series of practical staff development and e-learning creation workshops designed to harness excellence and transform expertise into effective and engaging e-learning content. This paper describes the rationale for this approach and the evolution of the workshops with examples of the templates and methods used, some of the outputs and evaluation results. It provides descriptions of workshop formats, templates and activities and a sample programme that may be useful to others setting up similar workshops.

## KEYWORDS

Workshops, e-learning, reusable learning objects, RLOs, staff development

## 1. INTRODUCTION

There is broad recognition that adequate staff development and support is crucial for early adoption, effective development, wide-spread sharing and reuse of e-learning materials and their evaluation; in fact all stages of the product lifecycle, (San Diego et al, 2008; Salmon et al, 2008) yet this vital support is often ignored, despite the clear benefits that flow from a well-supported communities of practice approach (Wenger, 1998). Engaging, practitioner-focused workshops provide a simple, yet effective mechanism for engaging practitioners in constructivist activities that can harness their excellence in teaching and learning, capturing their expertise with the goal of transforming it into formats suitable for e-learning production. Formative evaluation and peer-critique are spin-off benefits of the process as well as the networks of shared interest that form around a particular teaching and learning problem. This paper will argue that these initial processes are best encouraged and captured through social and not technological means; indeed, the very presence of technology may inhibit some practitioners from realizing the true potential of their expertise in an unfamiliar new medium where clear support, organizational structures and the people who actually make this happen are required (Littlejohn, 2003). The ACETS Project noted that "reuse is not particularly dependent on upfront technological support; the needs of teachers are often highly specific, contextualized and related to their personal approaches to teaching" (Ellaway et al, 2005) and went on to say that "it is therefore increasingly inappropriate for e-learning funding to go into technological developments without matched funding for pedagogical development" and a recent case study measuring the effectiveness of a blended learning intervention states that a "critical factor for the effective implementation of e-learning in universities is the development of academic staff" (Ooms et al, 2008).

How then, are staff appropriately supported and self-activated through the increasing and conflicting demands on their time and the need to acquire knowledge and experience of new practices and principles? Traditional teaching and learning methods often work well so it is essential to ensure that these valuable teaching skills are not lost in translation, which is always a danger in e-learning development (Smart & Holyfield, 2005). Similarly, staff who approach new initiatives unwillingly and with some trepidation need sympathetic support to help them overcome inertia, or unfamiliarity, or just plain fear (Oliver & Dempster, 2003). By setting technological solutions in a familiar context and by encouraging collaborative group-work in multidisciplinary teams of academics, developers and students, many of these potential barriers can be either avoided or overcome. The collaborative workshop format encourages the adoption of the social

constructivist perspectives to afford the co-construction of knowledge (Palincsar, 1998) and "inspires individuals to think about broader issues concerning learning and teaching" (Janda, 2004) often leading to much broader useful outcomes than the production of the learning resources themselves. Rewards and incentives can also increase sharing and enhance uptake (Bates et al, 2007) and even a simple intervention such as the protected time of a workshop can seem a great reward to an academic trying to balance the competing demands of teaching and research.

## **2. THE INTERACTIVE WORKSHOP FORMAT**

For learning objects (and, indeed, all learning materials) to be effective, it is essential that they are based on a clearly identified and articulated pedagogical need (Boyle et al, 2006). This involves the active input of tutors, ideally in teams with developers and students, so that ideas can be brainstormed and storyboarded as part of an iterative selection process that ultimately determines which learning objects will be developed. The most reusable learning objects will not only fill a particular pedagogical niche, they will also be more broadly applicable and hence reusable. One of the key purposes of the practitioner-based workshop then, is to provide a forum in which these objects may be identified, critiqued and selected. This is of necessity a broad-brush approach; the resulting designs can subsequently be expanded upon and refined. The workshops are popular and can be highly productive; for instance, a series of four run nationally in the UK in 2006 attracted 109 attendees and produced 20 learning designs (Leeder, 2006).

The process of revealing one's teaching practices, so central to the art of being a teacher, and so necessary in the workshop setting to ensure that all elements of a learning design are captured, can be challenging for some. So the workshop must provide a protected environment and an atmosphere of trust and mutual respect where participants feel supported and included. Teachers understandably will tend to focus on the familiar areas of their own subject specialisms and exhibit the "academic tribalism" coined by Becher (1989) so the experienced facilitator is sensitive to this and, recognizing that it is easier to generalize from the particular than vice versa, can permit a certain amount of "selfish" behaviour knowing that even this specialist knowledge can still be appropriated for the common good. The role of all the attendees, be they tutor, developer, student or facilitator, is that of participant observer in an action research setting and all are treated as peers. The ratio of attendees to facilitators should be no more than ten to one to ensure individual attention where necessary; these sessions often raise more questions than supply answers, but the questions inform the development of the workshops as they have evolved over the years.

The target audience is primarily academics, researchers, developers, learning technologists and administrators but the workshop will be suitable for all who wish to create and share learning objects to enhance teaching and learning. Participants should be willing to engage in hands-on activities and should be prepared for an informal and social setting. No pre-requisite knowledge is required and all materials are provided. These materials include the poster templates (discussed below) and also an information pack containing programme, participants' list, copies of presentations, links to useful sites, documentation of templates, tools and processes and an evaluation form. Participants should also be made aware of anticipated outcomes before the workshop as they will be expected to create and share their designs for learning objects. These will be digitally archived for subsequent download. It is also important to get permission to take photographs and video of the participants and a check box for this can be included on the booking form.

### **2.1 Poster Templates**

An important first principle of the e-learning development workshop is that in order to afford maximum inclusivity and participant engagement, the focus should be primarily on generic learning and not initially the technology. In order to achieve this focus and to make it very explicit, a reusable template in the form of a large A0 size poster was developed. This is laminated, so that it can be wiped clean and reused after each session. Teams work on the posters with semi-permanent marker pens and are encouraged to make full use of different colours to enhance visual impact and to help them think about visual representations of materials. Where the budget permits, for instance in a series of workshops funded as part of a broader e-learning design project (e.g. Sharing the LOAD, 2006/7), a visiting artist can be commissioned to attend (the costs for this

can be built in to the project) and this can greatly increase the visual appeal of the learning designs and provide useful references for the developer (or developers) conducting the subsequent development work.

The poster templates have been evolved to help facilitate the content unlocking process and they present a number of advantages: they are very user-friendly, requiring no technical expertise and therefore are suitable for the more techno-phobic; their size means that multidisciplinary groups can coalesce around them and this encourages collaborative working, debate and sharing of ideas; they are suggestive rather than prescriptive, presenting some simple prompts and principles from which ideas can be developed and knowledge can be captured and expressed; they encourage informality, groups often place them on the floor and sit around them; being laminated, they are completely reusable; participants write and draw on them with semi-permanent marker pens and the results are presented and then digitally photographed to be stored in an online repository building into a comprehensive library of learning designs; and they are fun!

The posters, embodying various learning design principles, have themselves evolved over the years and there are currently four distinct "flavours". Each has its advantages and disadvantages which are highlighted in the workshops and teams can choose which particular type they wish to work on. To a certain extent this will depend on the nature of the learning objective they wish to fulfill, although as these posters are largely variants of each other, in practice they are reasonably interchangeable, each offering a different nuance to the same overall approach. The four template types are (See Figure 1): Reusable Learning Object (RLO); Generative Learning Object (GLO); Storyboard; GLO-maker tool. Each template will now be discussed in some detail:

### **2.1.1 Reusable Learning Object template (November 2002, updated April 2004)**

This template expresses the "multimedia-sectioned" learning object design, that is, a learning object that comprises a number of sections or screens, each having embedded multimedia such as Director or Flash movies. It is divided into three main sections: presentation, activity and assessment, with prompts providing help for each section. *Advantages*: helps organise content, generates metadata. *Disadvantages*: may constrain unduly, creates a particular type of RLO.

### **2.1.2 Generative Learning Object template (April 2004)**

It was during early 2004 that the team to become RLO-CETL first began to explore the concept of generative learning objects and this template represented the early attempts to formalise some of the features of adaptability, the need for which had been identified in prior workshops. The GLO template has a field for "core" content and then space for three separate examples or instances of that content. *Advantages*: allows different instances of LO, generates metadata. *Disadvantages*: may constrain unduly, creates a particular type of GLO.

### **2.1.3 Storyboard template (November 2006)**

The storyboard template was developed as part a JISC-funded Design for Learning project (Sharing the LOAD, 2006-7) to provide a more open format with very little prescriptiveness. The openness requires participants to focus more closely on effective learning design, as the template provides only minimal guidance, but it allows maximal creativity through a series of storyboard panels that can be connected in any order. *Advantages*: open and flexible, no set navigation. *Disadvantages*: may be confusing, un-bounded.

### **2.1.4 GLO-maker tool template (November 2008)**

This is a print representation of the online GLO-maker tool (GLO-Maker, 2008-09). The online version consists of a variety of learning designs presented as a series of screens that the user can configure by adding, editing or deleting whereas in the poster template, the screens featuring just a single learning design are all presented on the same poster. The objective is to give the user a comprehensive overview of the tool and to allow them to develop some ideas for their GLO instance so that when they subsequently use the online tool they will be thoroughly familiar with its features. *Advantages*: maps to online tool; shows all screens on same poster. *Disadvantages*: not as flexible as online tool, based on only one pattern.

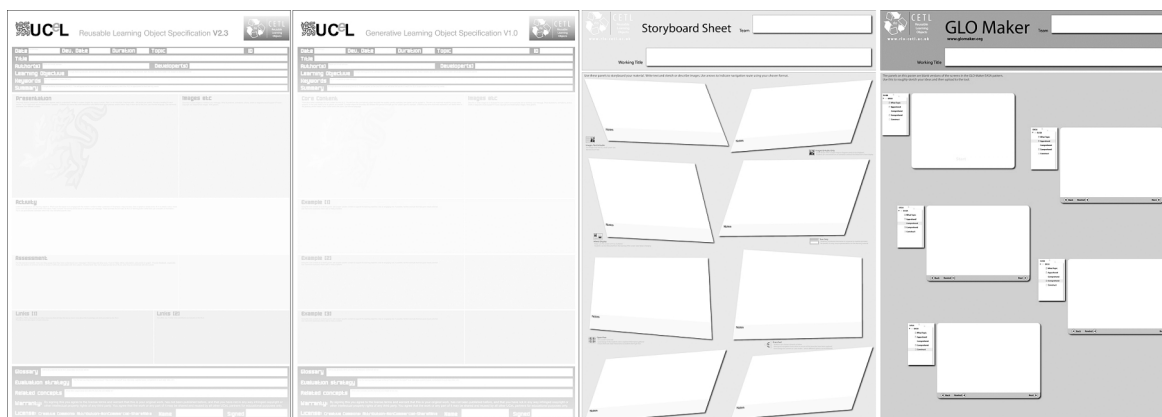


Figure 1. Poster Templates (from l to r) Reusable Learning Object (RLO); Generative Learning Object (GLO); Storyboard; GLO-maker tool

## 2.2 A sample workshop programme

A typical "unlocking content" or learning design workshop would have around 30 participants, including academics, developers and students, with a duration of either a half-day or one full day. A fuller, more comprehensive programme of activities can also be arranged, often lasting for two days or more, but that is not the subject of this paper. The workshop would take place in a large space with tables arranged "cabaret-style" to encourage group informal working, to remove the prime focus from the presenter and to make the session more participative. Interactive workshops encourage the production of interactive materials! The session commences with introductions and an overview of the day followed by an introduction to the principles of learning objects and learning design with demonstrations of examples. There is a 5 minute brainstorming session on the features of reusability and some facilitated teasing out of the learning designs that some participants have brought with them; joining instructions are sent out a week beforehand with travel details and general information about how to prepare:

"A key objective for the day is to identify reusable learning designs and to this end we would ask you to bring with you (either on paper or in your head) examples of successful learning designs that you have used (if you are an educator), have developed (if a developer) or that have facilitated your learning as a student. These should not be complicated or lengthy - they could be as simple as a short learning activity - but they should be designs you know to be pedagogically effective. We are not looking for lesson plans - these are way too big for our purposes - so it may help to focus on a single, self-contained learning objective and then describe the learning design required to fulfil that objective. We hope that the workshop will generate a variety of examples, so don't worry if nothing springs to mind immediately; there will be plenty of opportunity for discussion and facilitated group working."

A typical programme will allow most of the timetable to be allocated for group-work and hands-on activities; it is important that participants feel in control of the workshop:

- 10:00 Arrival, registration, tea & coffee
- 10:30 Introductions and outline of the day's activities
- 10:45 Learning Objects and Learning Design
- 11:00 Demonstrations of Learning Objects
- 11:15 Where do we start? – discussion. Identify broad topics suitable for development. Small group brainstorming to narrow down ideas for learning objects development
- 12:00 Groups choose templates and workspace, outline learning objective
- 12:30 Lunch
- 13:30 Interactive hands-on session. Working collaboratively on RLO poster templates to create content in small groups facilitated by roving presenters
- 15:00 Presentation and discussion of group work. Results are captured digitally to be archived

15:40 The next steps  
 16:00 Close

The overall objective is to provide a lively and interactive mix of presentations, demonstrations and activities. The atmosphere is informal with questions and interruptions encouraged. The main emphasis is on interactive group-work around the poster templates facilitated by roving presenters.

## 2.3 Workshop Outputs

From 2002 to date over 40 workshops have been held producing 184 archived learning designs (UCeL, 2002-2005; RLO-CETL, 2005-2009). The workshops have been held across the length and breadth of the British Isles from Glasgow to Plymouth and Belfast to Norwich. There have also been a number of international workshops in Europe (Amsterdam, Berlin, Dublin, Vienna) and the United States and Canada (Washington, Vancouver). The format seems extremely portable and the brainstorming sessions, where features of reusability are prompted, produce consistent results. The table below shows the features of reuse taken from three separate workshops spanning four years, where the common themes have been identified:

	<b>SLICE of LIFE Amsterdam 29/06/2004</b>	<b>Online Educa Berlin 29/11/2006</b>	<b>University of Ulster Belfast 15-16/12/2008</b>
<i>Adaptability</i>	Maintenance (updatable) Customisable Languages (different)	Modifiable (easily) Access to source files (corrections) Flexible - range of content What if version changes? Durability Reusable components - for other RLOS - repurpose	Timeless - future proofing Adaptable, easily modified Flexible
<i>Accessibility</i>	Easy access	Platform independence Language and jargon	Easy to use, accessible
<i>Legal</i>	Copyright statements Creative commons		
<i>User engagement</i>	Presentation methods Interactivity	Intuitive interfaces	Creative
<i>Quality assurance</i>		Evaluation and quality assurance	Quality Valid - fit for purpose Relevant
<i>Granularity</i>	Stand-alone Simple and focused	Generalisable Multi-disciplinary	Small Modular Not too broad - context Transferable
<i>Level</i>	Target group and level (pre-requisite knowledge)	Different levels in one object Student focus	Non-specific Generic Pre-requisites explicit
<i>Retrievability</i>	Metadata searchable	Indexing metadata, retrievability	
<i>Assessment</i>	Assessment	Assessment built in	
<i>Ownership</i>		Buy-in of community	

By cross-analysis of these results, a list of the key factors that affect reuse can be produced and the RLO-CETL can recommend that for effective reuse RLOs should be:

- small, self-contained
- generalisable across courses, institutions
- engaging, interactive
- platform independent, easily accessible
- standards compliant
- searchable, findable, retrievable
- freely available
- 'difficult' subject areas

- customisable, adaptable, flexible
- made collaboratively - common ownership
- based on real need - inclusion/relevance

The designs produced range across the whole breadth of higher education provision with the majority of designs up to 2005 in health professional education (which was UCeL's prime area) and then becoming more generic from 2005 to the present. Many designs have focused on study skills, numeracy and literacy. Basic science and statistical methods are also popular topics. Around one in 15 workshop designs have been ultimately developed into learning objects but this should not be regarded as the main measure of success of a workshop. It is clear from participants' comments that the participatory and inclusive nature of the workshop itself together with the opportunities it presents for group working and problem-solving are a powerful force for change, involving reappraisal of teaching practices through the practical application of theory.

## 2.4 Evaluations

The evaluation form is designed to measure the effectiveness of the entire workshop lifecycle; preparation, deployment and future plans. The form contains the following questions:

1. Were the registration instructions clear and timely?
2. Was the workshop relevant to your needs?
3. Were the workshop notes provided sufficient?
4. How would you rate:
  - a) The balance of presentation and practical work?
  - b) The standard of refreshments and lunch?
  - c) The quality of the facilities?

Responses are in the form of a five-point Likert item where 1 = "poor" and 5 = "excellent". The responses below are taken from a series of four workshops in late 2006 (Sharing the LOAD, 2006-7) where the average scores ranged from 4.1 to 4.5.

The final two questions are open-ended and invite comments:

5. Would you like to suggest any topics for future workshops?

Respondents' suggestions for future workshops can be roughly divided into six areas:

- i) Pedagogical design: *"More on pedagogical models i.e. Gagne, Merrill"; "Discipline-specific e-learning designs"; "Background on the project and how the sheets were designed"; "pedagogy of LOs"*.
- ii) Adaptation of materials: *"How to adapt a generic RLO for specific purposes"; "Using different RLO generating tools"; "Editing and updating LOs"*;
- iii) Technical aspects: *"Technical aspects of actually programming/writing an RLO"; "Technical aspects of creating RLOs"; "Accessibility"; "IMS Design (reload)"*
- iv) Communities of practice: *"How to access designers to work with lecturers on developing models - a workshop bringing both together"; "Workshop where practitioners share their observation of student engagement & experience of e-learning eg. LAMS, LOs, e-portfolios"; "Sharing good practice"*.
- v) Examples and demonstrations: *"Having facility to see an RLO in use & how it is developed"; "Interested in seeing further examples used to develop better understanding of what's possible"; "more general training on online learning"*
- vi) Quality & evaluation: *"Evaluation of LOs, more on attributes"; "Workshop to identify effective observation of learner engagement to evaluate effectiveness of e-learning"; "Online assessments"*.

#### 6. Any other comments?

Here, respondents are invited to make general comments about the workshop. Respondents clearly find value in the theoretical aspects that underpin the practical elements of the workshop: "*Stimulating and important. Moved my thinking forward*"; the community-building approach: "*lots of opportunity for networking and sharing ideas*"; the lively and engaging practical approach: "*A great opportunity to consider the practical things - loved the informality/formal mix*", "*Helpful & responsive presenters*".

Evaluations are ongoing and contribute to the iterative evolution of the workshops and especially to the development of the poster templates that facilitate the designs informing the learning objects.

### 3. CONCLUSION

The value of engaging, interactive, practitioner-focused workshops is evident in a number of aspects: at the base level, practitioners get to meet up, discuss teaching and learning concerns and brainstorm creative solutions and the workshops would be valuable in providing this opportunity alone. Yet they offer much more. A safe, creative environment, where no idea is discounted and all are encouraged to work collaboratively and playfully to explore the real everyday pedagogical issues that confront them; to come up with bold and innovative solutions; to reappraise their own practices in the light of newly shared knowledge; to be introduced to exciting new tools, techniques and processes in non-threatening and engaging ways; to be able to contribute to the development of those tools and techniques; to forge new networks and communities of interest that extend far beyond the workshop; to have time for reflection and recognize opportunities for professional and personal development. The workshops are remarkably cost-effective considering how much they deliver. Given a suitable space for the day, a team of three facilitators, with lunch and refreshments, posters and pens, costs less than a top of the range multimedia laptop and provides an engaging and memorable experience for up to 30 participants and produces a whole range of outputs, not least the learning objects themselves.

### 4. REFERENCES

- Bates, M., Loddington, S., Manuel, S. And Oppenheim, C., 2007 Attitudes to the rights and rewards for author contributions to repositories for teaching and learning *In ALT-J: Research in Learning Technology*, Vol. 15, No. 1, pp. 67-82
- Becher, T. 1989 *Academic Tribes and Territories: intellectual enquiry and the cultures of the disciplines*. Buckingham: SRHE/Open University Press.
- Boyle, T., Cook, J., Windle, R., Wharrad, H., Leeder, D. and Alton, R., 2006 An agile method for developing learning objects in Markauskaite, L., Goodyear, P. & Reimann, P. (Eds.) *Proceedings of the 23rd annual conference of the Australasian Society for Computers in Learning in Tertiary Education: Who's learning? Whose technology?* Sydney: Sydney University Press.
- Centre for Excellence in Teaching & Learning in Reusable Learning Objects (RLO-CETL) <http://www.rlo-cetl.ac.uk> (Accessed 3 March 2009)
- Cooke, R. 2008. *On-line Innovation in Higher Education*. Report to The Secretary of State for Innovation, Universities and Skills. [http://www.dius.gov.uk/policy/documents/online\\_innovation\\_in\\_he\\_131008.pdf](http://www.dius.gov.uk/policy/documents/online_innovation_in_he_131008.pdf) (accessed 18 Feb 2009)

Ellaway, R., Dewhurst, D., Mills, E., Quentin-Baxter, M., Hardy, S. and Leeder, D., 2005. *Assemble, Catalogue, Exemplify, Test & Share*. ACETS Project and the Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine, Newcastle-upon-Tyne, UK

Generative Learning Object Maker (GLO-Maker) Tool <http://www.glomaker.org/> (Accessed 6 March 2009)

Janda, R., 2004. Teaching Between the Cracks Part IV: Faculty Development: The Broader Picture. *In Rethinking Teaching in Higher Education: From a Course Design Workshop to a Faculty Development Framework*. Eds Saroyan, A., & Amundsen, C. Syrus, Virginia

Leeder, D. 2006. *Learning Design Workshops - Report* [http://www.ucel.ac.uk/load/docs/LD\\_workshops\\_report.doc](http://www.ucel.ac.uk/load/docs/LD_workshops_report.doc) (Accessed 19 February 2009)

Littlejohn, A., 2003. Supporting sustainable e-learning *In ALT-J: Research in Learning Technology*, Vol. 11, No. 3, pp. 88-102

Oliver, M. & Dempster, J. , 2003. Strategic staff development for embedding e-learning practices in HE. *In Blackwell, R. & Blackmore, P. (Eds), Towards Strategic Staff Development in Higher Education* Buckingham: SRHE/OU Press

Ooms, A., Burke, L., Linsey, T. and Heaton-Shrestha, C., 2008. Introducing e-developers to support a university's blended learning developments. *In ALT-J: Research in Learning Technology*, Vol. 16, No. 2, pp. 111-122

Palincsar, A. S., 1998. Social constructivist perspectives on teaching and learning, *In Annual Review of Psychology*, Vol. 49, pp 345-75

Centre for Excellence in Teaching & Learning in Reusable Learning Objects (RLO-CETL) <http://www.rlo-cetl.ac.uk/> (Accessed 19 Feb 2009)

Salmon, G., Jones, S. and Armellini, A., 2008. Building institutional capability in e-learning design *In ALT-J: Research in Learning Technology*, Vol. 16, No. 2, pp. 95-109

San Diego, J. P., Laurillard, D., Boyle, T., Bradley, C., Ljubojevic, D., Neumann, T. and Pearce, D., 2008. Towards a user-oriented analytical approach to learning design. *In ALT-J: Research in Learning Technology*, Vol. 16, No. 1, pp. 15-29

Sharing the LOAD, *Learning Objectives, Activities & Designs*, 2006-7 JISC Design for Learning Programme <http://www.ucel.ac.uk/load/> (Accessed 19 Feb 2009)

Smart, C. & Holyfield, S., 2005, *Lost in Translation: Getting teachers and techies talking* Report from Connecting Teachers and Technologists (Joint CETIS Enterprise SIG and CETIS Pedagogy Forum) Manchester, UK <http://www.elearning.ac.uk/features/translation> (Accessed 18 Feb 2009)

Universities' Collaboration in e-Learning (UCeL) <http://www.ucel.ac.uk/workshops> (Accessed 19 Feb 2009)

Wenger, E. , 1998. *Communities of Practice*. Cambridge: Cambridge University Press.