Final Project Report of the OULDI-JISC Project: Challenge and Change in Curriculum Design Process, Communities, Visualisation and Practice

Simon Cross
Rebecca Galley
Andrew Brasher
Martin Weller

Institute of Educational Technology
The Open University
July 2012

Executive Summary

Project Overview

The aim of the OULDI-JISC project was to implement, evaluate and revise a range of learning design tools, approaches and resources that had been developed for the enhancement of formal and informal curriculum design practice. Due to the scale, duration and impact of the project, it represents an important contribution to what has been a period of significant change in how 'design' is theorised, understood and practiced in the HE sector.

The project consisted of five interlinked strands of work focused on developing: processes and workshops to support design; new representations of curriculum designs; online social space for sharing learning design experiences; software for visualising student learning experience/teachers designs; and environments to promote communities of practice. At the Open University the project has sought to engage at both the strategic and cross-faculty level and in-situ through five unit or faculty pilots. Yet over the last four years it has also reached beyond the university, delivering pilots at five other UK universities, building an online global community of educational practitioners and disseminating materials and research.

From the outset, the project has been interested in key questions such as how best to achieve pedagogic benefits from new technologies and how to implement leaning and curriculum design in an institutional setting. Consequently project research, development and pilots have focused on how to understand, visualise, guide and share curriculum and learning design practices and artefacts. This final report, which should be read in conjunction with the project's Final Evaluation Report, presents an overview of what the project has achieved and how.

Key Achievements and Findings

1. Demonstrated that it is *possible* to achieve success in changing or improving the process, practice and perception of curriculum design[1] yet this requires a combination of elements working together: selection of effective design tools; well configured institutional and informal design processes; proper opportunity for collaboration; reflexive working and dedicated time away from the day-to-day to work on a design; positive and real management endorsement; staff with positive attitudes and adequate tacit knowledges of the art of teaching and the discipline of designing learning; and an expert consultant role to guide and advise teams. The success of embedding learning design is therefore dependent both on the internal quality of the particular design approach or tool and on the capability of the (institutional/professional skills) context to 'receive' it (see sections 2.1 & 2.3 below).

2. Created an online tool called Cloudworks which enables those working in learning and curriculum design to: view, add and comment on ideas/ work/ experiences of learning design (each object added is termed a 'cloud'), to organise these online

clouds in to groups ('cloudscapes') and to build personal public profiles of contributions. Between the tool launch in March 2009 and December 2011 there were 1.03 million page views, over 230,000 visits, 4,500 clouds added, and 5,500 comments posted. Cloudworks now has a strong brand image boasting over 4,600 registered users from across the world and use by several learning design related conferences and communities of practice (see 2.2).

3. Delivered nine pilots across six UK HE institutions. Each pilot has sought to present and embed learning design tools and approaches. In total over 270 staff have attended our workshops. These pilots have demonstrated how different contexts can impact on use and has shown that tools and approaches may often need to be partially re-versioned in order to become sufficiently relevant to a particular university process and culture. These pilots have required specific expertise in the practical and academic discipline of learning design, especially where there are a range of current design approaches used by individuals (see 2.3).

4. Customised OU-originated visualisation software to make it more usable in a learning design context. This software has been named CompendiumLD. The project team also used this opportunity to explore how learning design can be represented, the benefits of doing so, and barriers to the use of visualisation technologies. Many benefits have been identified – for example, one user noted 'all in all, I think this way to represent does have advantages with respect to more verbal approaches: it perhaps takes more time to learn to use it, but the final result is more 'readable'". CompendiumLD is open source, has been downloaded over 2,000 times and has been included in at least two university courses (see 2.4).

5. Fully engaged in disseminating the practical and research aspects of the project. The project team has: directly contributed to over twenty conference papers, several journal papers and a book chapter; delivered over forty presentations to external audiences; maintained a regular blog; and made resources, reports, tools and guides available on its website and the JISC Design Studio (see 2.5).

Report Structure

This report is divided in to three sections. Section 1 introduces the institutional, technological and teaching context of the project. Section 2 presents the benefits and impacts achieved by each of the five project strands. Section 3 synthesises project experiences and reflects on lessons learnt.

1. The Project

1.1 Project Approach

From the outset, the project intended to adopt an integrated approach to developing and structurally embedding curriculum design practices. This approach held that a quartet of project activities - understanding, representing, guiding and sharing design - must take place in tandem. Four central questions which helped direct project work were:

- In what ways can the efficiency and effectiveness of time spent designing learning be improved?
- How can we capture and represent practice; and in particular innovative practice?
- How can we provide 'scaffolds' or support for staff creating learning activities, which draw on good practice and make effective use of tools and pedagogies?
- What does a quality design process and 'methodology' look like?

The concept of a 'learning design methodology' has been integral to the project, however, different readings of the term could, and were, made. From one perspective, methodology referred to the approach the team were making in understanding and supporting designers – a methodology for research and support. A second perspective was that of a design methodology - the approach that an individual designer uses to create their design. And a third view was of methodology as a change process mechanism for restructuring institutional learning design practice. Understanding 'method' in these three ways and resisting a single definition has enabled us to connect more readily with diverse literatures and to orientate resources and tools towards user needs.

The project has comprised of five main work strands. This multi-strand approach has enabled it to deliver against five sets of objectives rather than one and to realise benefits of an integrated approach.

The first project strand has focused on creating an online tool called Cloudworks. This tool provides an open public space to which users can contribute and discuss their learning and teaching designs and experiences. When development of Cloudworks begun in late 2008 it was known that online repositories of good practice, case studies, learning objects and Open Educational Resources (OER) were not being used by teachers as much as was expected despite teachers apparently saying that they wanted examples of good practice and access to others to share and discuss ideas with (Beetham and Sharpe, 2007). Cloudworks sought a different approach to the repository model by drawing on theories based on the early work of Vygotsky and the work of Engestrom and Bouman in relation to mediating artefacts and dimensions of object-oriented sociality. This proved useful in developing the concept of 'clouds' and the type of interaction expected for our online learning and teaching design sharing tool (Engeström, 2005; Bouman et al., 2007; Conole & Culver, 2009). There was also a strong intention to borrow good practices from other popular social network sites (such as Flickr) and to permit only open design and open communities. An iterative approach to developing Cloudworks was adopted over a series of development phases.

The second and third project strands sought to assemble and develop a collection of useful tools and to trial these in six HE institutions. When the OULDI-JISC project begun, the OU had already created or revised a number of design tools ('tools' as used here includes resources, objects, conceptual frames, software or websites). Together these tools

comprised a nascent 'toolkit' which has been developed and augmented by the project team and other user contributions. Specific tools developed or revised by the OULDI-JISC project include: an Activity/Pedagogy Profiler tool inspired by the media advisor toolkit developed some years earlier and which used categories/headings and table-style layout informed by pedagogic schemas (Conole & Oliver, 1998); a Module Map tool which, whilst originally partially derived from the Principles/pedagogy matrix (Conole, 2008), has evolved significantly during the project; a Course Features Cards set; an Information Literacies Card set; and guides and workshop activities associated with visualising aspects of the curriculum design. This work was informed by research undertaken in the other strands, in particular around how learning designs can be used for making design knowledge more visible and for sharing designs with others.

The fourth work strand consisted of the technical software development of CompendiumLD. This utilised ongoing research about how designers do, and can, represent a learning or curriculum design in visual linear or non-linear ways. Early stages of the software development were informed by research from interviews and workshops held at the OU, the broader learning design literature (Koper & Oliver, 2004; Conole & Mulholland, 2007; Beetham, 2007), instructional design literature, and from others who had examined use of concept mapping in problem-solving and notion (Baylor et al., 2005; Inglis & Bradley, 2005; Gibbons & Brewer, 2005; Novak & Cañas, 2008). Four iteration phases were planned (with each using user testing and feedback to inform the next) and full version with supporting guidance was launched in December 2011.

The final project strand sought to draw together the work on Cloudworks, CompendiumLD and on guiding and supporting design by seeking to establish self-sustaining communities within Cloudworks. The experience of supporting groups on Cloudworks was intended to feedback to future technical development and in to developing support and guidance for the tool.

In addition to these work strands, the project aimed to contribute to the broader JISC programme in which it was situated so aligned with the definition of curriculum design given by JISC in 2008 (although this definition is not without its limitations):

> *'Curriculum design' is generally understood as a high-level process defining the learning to take place within a specific programme of study, leading to specific unit(s) of credit or qualification. The curriculum design process leads to the production of core programme/module documents such as a course/module description, validation documents, prospectus entry, and course handbook. This process involves consideration of resource allocation, marketing of the course, and learners' final outcomes and destinations, as well as general learning and teaching approaches and requirements. It could be said to answer the questions 'What needs to be learned?', 'What resources will this require?', and 'How will this be assessed?' (JISC, 2008)*

In this definition, the terms 'course' and 'module' are used interchangeably. Over the duration of the project, both have been used by staff and in policy documents at the lead and partner institutions. Where possible this report uses the term module although the term course or unit may appear when directly quoting staff.

The following sections outline the educational, learning design and technical contexts to the project.

1.2 Educational context

The Open University is the UK's largest provider of distance Higher Education and is consistently ranked in the top five HE institutions for student satisfaction. As such, the university is constantly looking for innovative ways to help create and deliver quality learning experiences.

> 'The five institutions participating in this project collectively account for one in every five students enrolled in Higher Education in the UK.'[2]

At the Open University there is perhaps a longer, more complex module production process than is experienced at some other universities. The process typically lasts between two and four years and involves dozens of staff, many with specialised skills in academic content writing, teaching, project management, media production and technical development. There are a series of 'stage gates' through which every module in production must pass. Paper work and committee approval is required at each gate.[3] Once created by the module team, the module is deemed ready for 'presentation'. When in presentation, teaching and support of the module is handled in the first instance by a regional office. The regional office will assign students to a group (often of around fifteen), appoint a contracted associate lecturer to each group and deal with many student support issues. The associate lecturer marks assignments, provides online and telephone support and also arranges a number of face-to-face sessions, typically one every six to eight weeks. Student attendance is not mandatory so individual student experience can range from a semi-blended experience to a purely distance learning experience. A centrally-based student support service is also provided. Modules are usually presented once or twice a year depending on demand with a core presentation team responsible for formative exam assessment, moderation and awards.

By the time this project began in 2008, the OU had started to recognise that variation in the production/presentation model might be required so that, for example, new methods of teaching and learning innovation could be implemented, modules with lower numbers of students or using more online teaching could be produced more efficiently, student support could be enhanced or modules could be produced more quickly (for example, using brought-in, wrap-around or disaggregated assets). This fundamental interest in revisiting university systems and processes has been the driver for many OU projects including the Course Business Models (CBM) project, publishing of a Curriculum Strategy Framework and for including the aim to 'develop and apply new approaches to learning design [and] expand the Learning Design initiative across all CAUs' in the Learning and Teaching Strategy.

The educational contexts of our five partners, as could be expected, are quite different from one another and from the OU. More details about specific institutional or departmental contexts can be found in the final reports for each of our nine pilots.[4]

1.3 Learning Design Context

The OULDI-JISC project was conceived in 2008 against a background of increasing research and development of 'learning designs' that a computer can automatically run, design for learning, and design patterns. The edited volume by Agoshiho et al. and the papers presented at the 2008 LAMS Conference give a useful survey of the key views held by learning design researchers in late 2008,[5] whilst the work undertaken for the JISC funded Design for Learning Programme, which ended in mid-2008, is perhaps a good indicator of the progress made by UK institutions immediately before our project began.[6] More locally within the OU, by 2008 strategic funds were already supporting some preliminary work on learning design including research and prototyping.[7]

The original project plan highlighted several issues current in the literature at that time. For example: the claim that learning design could help narrow the gap between the apparent potential and the actual use of new learning technologies; the belief that learning design could offer more agile and responsive solutions to increasingly complex curriculum design problems and the ambition to promote more re-use of open educational materials. The project, however, also argued that more was required in terms of gathering empirical evidence about how teachers 'design', developing theoretically informed ways to visualise designs, producing effective tools and support to guide design, and exploring how practitioners share and communicate teaching and learning plans and experiences.

An initial Baseline Review was researched and published by the team in 2009. This provided further insight into learning design at the OU. Interviews with senior managers, stakeholders from three OU faculties (including at least one Associate Dean, Courses Office Managers for Curriculum and Awards, Module Chair, Programme Manager, Senior Course Manager, Deputy Director of Courses), and our five pilot teams showed a range of interests and the importance many stakeholders attached to the project.[8]

In addition, interviews conducted during 2008-2009 with academic lecturers revealed a diversity of practice in respect to what was considered when creating modules and in which order. From this emerged the notion that there is no one sequence or method for using curriculum design tools. This was captured in the call for a design 'toolbox' and a 'pick-and-mix' approach.[9] Further staff surveys also revealed a diversity of practitioner attitudes and abilities in relation to learning design (n=50). Around half believed it is becoming harder to understand how all the parts of planned learning and teaching fit together and 69% felt there was a need for clearer methods of representing the structure and key content/components of a course.[10]

1.4 Technical Context

The Open University has a mature VLE platform based on Moodle and in 2009 some eighty-five per cent of courses used the VLE (with approximately sixty per cent adopting VLE tools for teaching and learning). The VLE includes robust networks based on the StudentHome and TutorHome portals, which link students to the University, their tutors and each other, and an online assignment submission and return system.

The university has a number of systems that underpin course/curriculum design. The Baseline Report reviewed: the PLANET (PLAnning over a NETwork) system – used for recording data about a course; CIRCE (Corporate and Individual Records for Customers and Enquirers) - which holds student data; and the VLE. A detailed process flowchart mapping of the course production process was also conducted during the review. This consisted of over 40 charts showing the 'as is' process. Two indirect outcomes of this work was finding that institutional systems hold multiple sources for information about the stage gate approval processes and that there was no single 'owner' of the process.[11] The project team produced a model of the formal 'intended' design process (the on which technical systems such as PLANET are based) formed a valuable reference point for the project and resource for others in the university.

When the project began in 2008, the university was already funding exploratory work focused on re-purposing some visualisation software called Compendium (developed in-house by the OU's Knowledge Media Institute) specifically for learning design. This software was chosen over other concept mapping packages, such as cMap,[12] because the OULDI project team had access to the original code. This has meant the project team have been able to adapt the software with new functionality, templates, export options and diagram renders that are more appropriate for learning designing.

The other, more major, anticipated technological development for the project was a social space which was to be object-orientated rather than person-orientated. The aim was to build a tool for 'exchanging learning and teaching ideas and experiences' and through this build capacity for self-organising and sustainability. There were no satisfactory open source options in 2008 so the tool was developed in-house over three phases and several iterations. The final stage of this development has been to release an open source version called CloudEngine which can be installed on local systems elsewhere.[13]

2. BENEFITS

2.1 Design Processes

Strategic Impact: Learning design has moved up the strategic agenda especially in relation to the perceived new challenges and complexity associated with using new technologies and learning online. In 2009, the work of the project and others in raising awareness of learning design resulted in the university's new Learning and Teaching Strategy including two related strategic objectives: to 'develop and apply new approaches to learning design' and that 'all staff will have expertise to engage in learning design.' Continued engagement has meant that the OULDI project has contributed two of the five Curriculum Business Model representations that via the CBM project will be given to and used by all new modules being developed. The OULDI engagement with the institution is also reflected in Curriculum Design now featuring in the most recent Institute of Educational Technology Business Plan, in the revised process for module development in the Faculty of Education, and in a new draft for Module Chair (the module development leader) roles.[14]

Operational Impact: The project's focus on the business process of design has been timely and in general well received by managers. The Baseline Review and visual representations of the production process has resulted in revisions being made to the process guidance provided by the university. It has also contributed to an emerging institutional case for revising the curriculum design process. Indications of this emerging awareness can be seen in the launch of an institutional Stage Gate Process Review and the expertise in learning design acquired within IET now being used to train others.

Efficiency saving: Feedback from staff (n=>150) indicates that workshops, especially with wrap-around support, were considered by staff to be more effective in promoting staff engagement/learning than asking staff to self-study. The nine pilots undertaken by the OULDI-JISC project also reveal some stakeholders imagine curriculum design to be a panacea that will help deliver more effective teams *whilst* helping deliver efficiency savings *whilst* helping deliver greater design creativity and critical reflection *whilst* helping deliver better designed courses and student experience![15] Saving staff time (or resource) is certainly an important variable, however, design efficiency is also about quality (having a measurable level of design process and product value), designer efficiency (how skilful the individual is at designing), and effectiveness (ending up with a course appropriate for the learners). We must move beyond jumping to the assumption that because a design phase takes longer it is less efficient, and conversely that only because a design has been produced more quickly it has necessarily been produced more efficiently.[16]

Systems Integration: Curriculum design, and the associated tools and approaches, can enable other professionals besides the academic content authors to better frame their potential contribution to course production. The OULDI-JISC project has helped the OU Library and media production unit to align their services with the new CBM requirements.

Cultural Impact: cultural change may be evidenced in changes of language, behaviour and perceived value - although how much of this can be ascribed to any particular agent (i.e. this project) is harder to demonstrate. By mid-2010 (midway through the project) around half of the academic staff surveyed said they had come across the term 'learning design' (n=100) and, just as learning/curriculum design is assuming a greater role in strategic document (see above), it is also being used more in day-to-day conversation at the university. There are also several interpretations or definitions of 'learning design' being used and, whilst this may

pose challenges to centralised roll-out, this heterogeneity indicates the concept is being adopted (and possibly contested) by many at the university.

Top-Down and Bottom-Up in tandem: The project has found that there can be many benefits to coupling top-down and bottom-up approaches to change. Bottom-up activity can develop innovation quickly and provide good use examples, yet strategic top-down approaches may enable these practices to spread laterally across the organisation more quickly. For example, without strategic endorsement, it is unlikely that the Institute of Educational Technology would have assigned to each faculty a Curriculum Business Model/Learning Design (CBM/LD) representative or that resource would have found to develop a physical CBM/LD toolbox for every new module team. It is too early to see if, and how, such top-down approaches monitor and evaluate the quality of this roll-out.

Institutional and inter-faculty Variation: our nine pilots have enabled the project to explore the differences in design practices and processes between different academic faculties, between academic faculties and other university units, and between different universities. Section 3 considers some of these in more detail.

2.2 Design Communities and Cloudworks

Creation of a Sustainable Online Community: The Cloudworks and community development strand of the project has achieved all stated project deliverables. For example, by December 2011 over 4,500 Clouds had been added (exceeding the target of 4,000); several communities of practice, some associated with conferences, are using Cloudworks; and after the project ends the tool will continue to be supported by the OU.[17] Cloudworks could be said to have achieved a 'critical mass' because in the last six months of 2011, project team contributions comprised just 5% of all added content, yet the total number of monthly posts and visits, whilst variable month-by-month, remained broadly stable.

Effective trial of how communities use 'community space': Cloudworks has demonstrated itself to be a successful place for: open sharing of conference and workshop discussions and resources; promoting and raising visibility of project work or individual views; and a place for short 'flash' discussions on teaching and learning subjects. However, as a community, whilst interested in reading content on Cloudworks, most learning and teaching professionals do not appear prepared, ready and/or incentivised enough to actually exchange and contribute their learning designs. Despite sustained effort over almost three years - in terms of including functionality that social media experts believe should work, promotion, and free support provided to groups and individuals -, contribution levels remain similar to those reported for other online communities (only 5-8% of all registered users sustain their contributions beyond the first few days of engagement). Study of social interaction on the Cloudworks has highlighted how different social theories of identity and positioning can each help interpret the activity observed.[18]

Benchmark for future projects: Cloudworks has sought to deliver a tool consistent with accepted good practice for online social community spaces. Therefore, future projects that seek to build online teaching and learning communities can learn important lessons from the Cloudworks project and, where relevant, should aim to articulate how they expect user behaviour to differ (or be similar) from the norms witnessed by projects such as this. This may require outlining how mechanically, psychologically and sociologically the project differs from existing models that have been trialled.

Face-to-face social interaction: a clear message from the workshops across the pilot institutions was that staff really valued the opportunity to communicate face-to-face with their fellow designers or peers; the opportunity to 'make time' for design was welcomed and regarded as a significant benefit.

2.3 Design Practices

Impact on practices: in learning to use the tools, approaches and resources of learning design, staff acquire new conceptual frames, deeper understandings of pedagogies and a richer language to describe their intentions, reasoning and practice. This shift from design practices being implicit to explicit – from in Giddens' terms practical consciousness ('We do it this way') to discursive consciousness ('I am doing this because') – enables staff to develop a greater reflexive relationship with their designs. This is important to the practice of design; indeed, others believe design can be viewed as a mutual learning process among designers or a reflective conversation between designers and the designs they create.[19]

Effectiveness of tools and approaches: a range of learning design tools have been trialled across the project's nine pilots and additional events. This has helped identify the value offered by each type of tool:

- One-page visualisations of the module (the Module Map): this tool is often one of the first curriculum design tools that staff encounter and, partly due to the straightforward layout (a more familiar box or table layout), can help engage in the process of beginning to think about and do design better. As with other representations, the more skilled the designer (or those guiding them) the more effective the tool will be.
- Mapping of the student experience: one form of visual diagrammatic map, also termed 'Swimlane' or CompendiumLD Map, is based on more abstract techniques of concept and relationship mapping, but can really help to map-out and unwrap the components and relationships between course elements. A variant of this are concept maps of a more limited number of categories (such as outcome-activity diagrams). The project has found around half of practitioners are comfortable with this form of diagramming, or at least happy to engage with it. However, few seemed to exploit multi-level nested map functionality or include links from external web pages or files such as Word document.[20] Those who resist these visual forms of mapping either feel they are 'not visual people' or 'don't have', or 'don't have the time to learn', the relevant skills. The former is harder to address because it seems rooted in a belief that there is some potentially insurmountable physiological barrier beyond the individual's control. These reasons are still seen as culturally acceptable unlike in other design fields where sophisticated visualisation skills are considered essential.
- Profiling pedagogy (the Pedagogy Profiler): this representation uses the familiar visual formats of a table and bar graph. Many staff have either struggled with how each category should be defined and with the more unfamiliar activity of having to attach a numerical figure to student activity. It becomes easier once the staff understand this is a tool to help them better understand and challenge their conceptions of what, in terms of pedagogic balance, the module actually looks like.

Resisting change: in order to avoid adopting or engaging with new learning design practices individuals, groups or even institutions can seek to mobilise a 'discourse of resistance'. This can include reference to lack of staff time and cost, lack of evidence and testing of the tools and techniques, lack of tool/approach theoretical underpinnings, and demands for teacher autonomy. It can be difficult to distinguish between 'legitimate' and diversionary reasons (which are often inadvertently institutionally or culturally legitimated).[21]

2.4 Design Software and Visualisation

A tool for 'skilled' staff: the pilots show that many staff feel they do not have the sufficient visual language or skills to create or effectively using concept-style curriculum design diagrams. Also, whilst guidance can be provided, these skills require a degree of 'deep' learning. There are examples of staff with this more developed skill in visualisation embracing CompendiumLD in the personal narratives produced from the pilots. Furthermore, CompendiumLD has been downloaded over 2,000 times (including over 100 from the OU) and some support resources have been accessed over 4,000 times. This makes it difficult explain cases where CompendiumLD hasn't been used: is this lack of user skill, a usability issue or how it is presented?

Benefits to visualisation: the project has found that visualising learning designs can help in:
- Making the structure and relationships explicit
- Supporting reflection on the learning design and in particular the student experience
- Testing how achievablend practical the design is
- A diagnostic tool for the evaluation and annotation of a design
- Collaboration and communication of ideas
- Organising thoughts, including mind-mapping and brainstorming
- Sharing the visual design or 'learning plan' with students
- Supporting the teaching of the course: A tool for lecturers or associate lecturers
- Supporting changes in practice
- Expressing information, concepts or relationships in the form that is most easily absorbed and retained (e.g. the shape of a graph)
- Capturing the process of design in addition to the final output (forming a record of discussion and development)[22]

New Conceptual Frame: a new, expanded framework for laying out learning designs in a sequence/swim-lane format has been developed for CompendiumLD. This extends the three categories used in previous representations (activity, tools and resources) and adds learning output, learning outcomes, teacher intent, support role, and what is to be learnt. This conceptual frame supported by CompendiumLD can be a powerful change agent and can change how been think about or imagine a design even if they do not go on to regularly use the software. For example, cases of people using other concept mapping software or even just paper to sketch a 'CompendiumLD-style' diagram have been observed. To support this sketching, packs of 'post-its' based on the CompendiumLD icons have been created so teams can create a 'physical' design before transferring it to CompendiumLD which features the same icon sets. The icons themselves are also downloadable. CompendiumLD allows users to decide on their own method of representation and, whilst usually demonstrated using a learning design sequence, some find this a barrier and prefer to show the learning as a cyclical and iterative process.

Development barriers: usability testing revealed several issues with the original Compendium software, especially in respect to how easily it could be customised to learning and teaching audience. Development by the project team has addressed some of these with all development based on original user suggestions. The project has found interest in some features (such as an automatic running total of planned activity timing) yet less appetite for others (such as the context sensitive help).

3.5 Sector-wide Benefits

Project Website and Blog: the project website features information about the project, the design tools and support, the workshops and publications. It also includes a project blog which has been regularly updated with news and project progress.[23] Where relevant the project team have deposited information and resources on the JISC Design Studio.

New professional networks: Cloudworks, with over 4,000 registered users (over 90% of whom are not based at the OU), has become a valuable platform for sharing of teaching and learning design experiences. In addition, the project itself has also added much useful content including the OULDI 'toolbox' cloudscape. The publication list below demonstrates the team have also learnt much about the enablers and barriers to online social spaces for sharing.

Workshops and resources for practitioners: in addition to the core resources that the OULDI-JISC project has produced (such as the Module Map and Pedagogy Profiler), it has created over a dozen guides to support design practices. These include guides for workshop activities, using Cloudworks and CompendiumLD, and about learning design more generally. The team have also delivered presentations at various events such as the JISC Elluminate Wednesday series, JISC Experts Meetings and the OU Computer Assisted Learning Research Group conference.[24]

Visual design tool: there have been over 1,000 downloads of CompendiumLD by non-OU staff. This indicates broader sector wide exposure and it would appear that CompendiumLD is being included in teaching materials about Learning Design at the University of Geneva.

Sharing research: The project has contributed papers to the following conferences:
- ASCILTE 2008
- ALT-C 2009
- Networked Learning Conference 2010
- European LAMS and Learning Design Conference 2010
- ALT-C 2010 (x2)
- International Blended Learning Conference 2011
- ALT-C 2011
- ASLD Conference 2011
- London Knowledge Labs event 2011
- SEDA 2011
- JISC Online Conference 2011
- International Blended Learning Conference 2012 (x2)
- Higher Education Academy Conference 2012

4. PROJECT SYNTHESIS

4.1 Summary of Success in delivering Project Objectives

All nine of the project objectives have been achieved. A summary of how the project has successfully accomplished each presented in the table.

Project Objective	How objective achieved
1. To develop working relationships with units in the OU and to explore the transferability of elements of our approach by working with five other UK universities and two pan-communities, capturing barriers and enables by appropriate data recording mechanisms	**Achieved**. During the pilots the project team have worked with the faculties of Education and Languages, Business and Law, and Heath and Social Care and with Library Services and Learning and Teaching Solutions Unit. The baseline and promotional work have involved other OU units and faculties. The transferability of approach with the universities of Reading, Brunel, Cambridge, London South Bank and Leicester and the LAMS community has been expored, in addition to creating a pan-community in Cloudworks. Barriers and enablers have been captured by a rich methodology of interviews, surveys, feedback capture, images, video, online comments, blogs, and observation.
2. To review the existing curriculum design processes at the OU in the first year of the project including describing and modelling the curriculum design process	**Achieved**. A comprehensive business process review was undertaken by the project. The outcome was a detailed process mapping (extending to over A4 40 pages) validated by key stakeholders, a series of stakeholder interviews, and a review of key software systems and roles. A survey of staff attitudes (n=50) and further staff interviews were also made.
3. To work with stakeholders at the OU to identify key moments in which enhancement or change in curriculum design process could lead to improved quality of design, and to work with partner institutions to undertake a similar process	**Achieved**. The curriculum design process review enabled the team to compare and contrast what information is required for each stage of the production process. This data (visual, textual, spreadsheet) has been used in several internal pilots both to change process and to change individual practice. The project provided support, including a workshop, to help partners undertake their own institutional process mappings.
4. To pilot learning design methodologies, tools and techniques in at least eight trials and to document and evaluate this experience	**Achieved**. In total there have been nine formal pilots although only eight (four internal and five external) fully accomplished their deliverables. A separate evaluation report has been written for each of the nine. The external pilots took place at the universities of Reading, Brunel, Cambridge, Leicester and LSBU. Some additional trials, beyond the main project scope, have also taken place.

5. To engage with, build or enhance a range of communities and develop their capacity for self-sustainability particularly focusing on organised events, key topic or subject areas, existing operational units and conferences or special interest groups	**Achieved**. The team have supported a number of communities of practice and conference/events in building a presence on Cloudworks. Papers to the European LAMS and ATL-C conference illustrate this work. There has been institutional agreement to continue to maintain Cloudworks after the project ends. The launch of CloudEngine will enable communities to install their own institutional versions of Cloudworks.
6. To increase, monitor and evaluate exchanges of learning and teaching ideas and experiences in appropriate communities	**Achieved**. In total, over 4,000 comments have made on Cloudworks the tool was launched. The tool has been monitored throughout by the project officer, the team have initiated or contributed to several hundred clouds, and monthly web stats have been logged. User exchanges have been evaluated in reference to performance, collectively and self-representation and quantitatively.
7. To undertake and review annually enhancements to the website(s) being used to support the community building and activities planned (e.g. Cloudworks)	**Achieved.** Development of Cloudworks has taken place across three phrases; each broadly lasting a year. Development in Phases 2 and 3 used feedback data and issue logs from the previous phase. Evaluation reports on Phases 1 and 2 and on Phase 3 have been published. Technical development has been reported in our interim six month project reports and annual meetings with CETIS.
8. To undertake and review annually enhancements to the visualisation software used to support the pilot and design mapping tasks (e.g. CompendiumLD)	**Achieved.** Iterative development of CompendiumLD has drawn significantly on regular reviews of user feedback and issues logs, and on associated research and investigation. Further opportunities for evaluating enhancements such as conference events/workshops, using it in a post-graduate taught course, and expert usability testing were also taken. Technical development has been reported in our interim six month project reports and in meetings with CETIS.
9. To continue to broaden in scope, content and definition the OU learning design methodology.	**Achieved.** During the project the team have initiated much new development including: new workshop activities and formats; revisions to core design representations, support to produce a digital literacy cards pack, building the Brunel Design Suite, creating materials for an OU Curriculum Business Models box, and designing a pack of pedagogy features cards. The team have also researched and presented papers on visualisation, design communities, and embedding design processes. All work is available on the OULDI website and the Design Studio.

The project has published final reports for all nine project pilots and one each for the Cloudwork, CompendiumLD and baseline work. Evidence and analysis from these twelve individual reports is pulled together and synthesised in the final Project Evaluation Report: [25]

- [Full Project Evaluation Report](#)

- [Cloudworks Final Report Phases 1 and 2](#)
- [CompendiumLD Final Report](#)
- [Reading University Pilot Final Report](#)
- [Brunel University Pilot Final Report](#)
- [Cambridge University Pilot Final Report](#)
- [Faculty of Education and Languages Pilot Final Report](#)
- [Library Services Pilot Final Report](#)
- [Support Units Pilot Final Report](#)
- [Leicester University Pilot Final Report](#)
- [London South Bank Pilot Draft Report](#)
- [Bridge to Success (B2S) Project Pilot Final Report](#)
- [Baseline Final Report](#)

4.2 Lessons to share

There have been five inter-linked strands of work to the OULDI-JISC project and, when considered together, a number of important themes and observation are discernable. Eleven that the project team would highlight are:

1. It is *possible* to achieve success in changing or improving the process, practice and perception of curriculum design yet this requires a combination of elements working together. Furthermore, conducting pilots in six different HE institutions has shown how the same toolbox of activities and resources, with the same support and presented from the same theoretical context, can yield such different results. This insight in to the *range* of potential successes can be appreciated by reading the eight pilot reports.

2. There is often a great difference between the idealised process (that codified in guidance and formal organisation of staff) and the real process interactions that take place; a difference between management sponsored process and what individual staff do. It is in the practices and culture of the latter – the lived enacted process – that this project has particularly sought change. Implementing this can sometimes be hindered by the, often significant, autonomy institutions give to their academics or course development teams and cases of resistance do not appear uncommon. However, the project has also identified dozens of cases where staff have embraced a design approach and achieved real benefit from it. It has also found that the 'felt' responsibility for improving the quality of teaching and learning by a stakeholder sometimes exceeds (or can fall short) of that formally expected of a role.

3. The challenge of convincing staff that a design approach would be helpful can be hindered by the difficulty in demonstrating or 'proving' there is a need to change. In one of the external pilots, national student survey data was one driver for change. Elsewhere metrics may not so easily reveal a need to change. This would indicate

that there is a need for more measures in respect to the quality of design process, product, skill, and efficiency and the suitability and effectiveness of the designed learning.

4. The project has provided insight into how interconnected the stages are in the design process. It has noted the problem of course teams moving too readily past the design in to the 'embodiment' phase of course creation and of designers evaluating tools in respect to how much the tool saves them time or effort rather than on the benefits to others in the process, most notably students. However, the FELS Pilot demonstrates how understanding the interconnections could make the process more efficient. In this they attempt to save resource in the production and create a better learning experience by investing slightly more in the earlier design phase.

5. Stakeholders differ in their understandings of the purpose and potential of curriculum design. So, whilst curriculum design has its roots in a learning design philosophy of needing to foreground the learner and the learner experience, for some, it the potential benefit of process improvement, cost savings or delivering against a strategic objective that holds attraction.

6. Tools or design activities that represent a minor step for staff are more likely to be accepted and used. This may be because they require little change of design practice/approach or the learning of new pedagogic knowledge. The Course Map is an example of such a tool. In part, it asks an academic to list what they already know, but it also helps to reveal gaps in the design and represents the course in a slightly different way. Yet the power of this, and other tools, is in the meaning understood by the designer in what is written rather than the words themselves. Tools that represent a greater step – even those that appear to offer or push more assertively for a paradigm shift – are less universally favoured although some practitioners can recognise their value. The open sharing of a course development on Cloudworks or a more comprehensive use of CompendiumLD to lie towards this end of the spectrum. In addition to the degree of change, the project has also observed that tools or design activities concerning working on high-level course descriptions may appeal to those designing curriculum more than working on the detail of designs.

7. There is a complex and nuanced relationship between course quality and the time expended in design. Providing even modest additional opportunities to reflect on or to discuss designs with others can lead to improvements in the design quality. Indeed, consistent feedback from the pilot workshops revealed participants highly valued the opportunity to take 'time-out' from other non-learning and teaching commitments and focus on, share perceptions of and discuss their design.

8. The open exchange of teaching and learning design experience remains limited to a small minority (between 5 and 10%) of staff although there is clear evidence of users being interested in reading others posts and observing the sharing of knowledge that takes place during events or other moments of higher co-presence. The notion of 'critical mass' may skew attention towards questions of size rather than quality of core contributors although undoubtedly the perception of a site or tool being big

enough to matter will impact on the perceptions of users and also decisions on continuing funding.

9. Communicating the breath of the project ambition - of working concurrently with and the overlap between multiple strands of work has as times proved a challenge. The release-early approach can have impact staff perceptions both negatively (first impressions of a prototype tool can be difficult to overcome) and positively (individuals and pilots can be identified and our message gradually refined). Whilst there is much information available on our website and the Design Studio, quite quickly in conversations with staff it can become clear whether they have found the time or had the inclination to look at it.

10. The project has derived great benefit from being part of a twelve project national JISC programme and from gaining insight and experience of other institutional practice. The successes at more than one of the external pilots have undoubtedly strengthened the internal case for adopting a learning design approach as have the internal pilots provided resources and lessons that can be passed on to other institutions.

11. Project tools and resources use a variety of representational forms; from concept mapping to structured tables. Many of these are different to current methods of representing learning and curriculum designs. As such, in disrupting practice and accepted process, they have the capacity to offer new perspectives, to challenge, and to promote reflection. Whilst not necessarily conducive to making a process shorter, such disruption may help make it more efficient, effective and capable of delivering greater quality outcomes.

4.3 Looking Ahead

Looking ahead, the tools and approaches developed by the project will continue to play a role in institutional curriculum design processes and practices. Several of the design tools and activities developed by the OULDI-JISC team will be included in the Open University's Curriculum Business Models design box. This box will be used by faculties to help support the design of new modules. Pilots too have had an impact, for example, the Faculty of Education and Languages is exploring how to allow module teams more time for design, learning design has been incorporated into the teaching and learning strategy at Brunel University, and Library Services have a new facilitation tool to help support better integration of information literacy into modules. Cloudworks will continue to be supported by The Open University and CompendiumLD and CloudEngine will remain available for download. Furthermore, the OULDI-JISC project has recently secured additional funding from JISC for benefits realisation. The focus of this new work will be developing, delivering and evaluating a Curriculum Design MOOC (Massive Open Online Course) in autumn 2012. This will provide the opportunity to disseminate and promote tools, resources and design practices developed by the OULDI-JISC project and other JISC funded work.

Acknowledgements

The OULDI Project team at the OU has consisted of Rebecca Galley, Gráinne Conole, Simon Cross, Juliette Culver, Paul Mundin, Andrew Brasher, Nick Freear, Richard Lovelock and Martin Weller.

We on the project team would like to thank our partners and the many hundreds of people who have been involved in the project, participated in our pilots or used and feedback on our tools and resources. We are grateful for your contributions and for helping the project achieve its objectives.

Thanks to Natalie Parnis, Maria Papaefthimou, Phil Alberts, Anu Sharma and Derek Milligan for their additional contributions to the project and similarly to Cecilia Garrido, Perry Williams, Jan Parker, Patrick McAndrew, Gill Marshall, John Pettit and Mick Jones for facilitating access to pilot groups. Our baseline report acknowledges the contribution many OU staff made to creating the 'as-is' model of our institutional processes and our Cloudworks reports recognise the contributions of many communities of practice, event organisers and conference organisers as well as the Cloudworks critical friends group and Panagiota Alevizou. In supporting our development of CompendiumLD we would like to thank colleagues from KMI and the Maths, Science and Technology Faculty and, in testing the software, Anne Jelfs, Anna Page and Chetz Colwell.

Additionally, thanks to all those not directly involved in the project but who have told us about how they have been using our tools, approach and resources; in particular Itana Gimenes. And finally, thanks to the JISC project team, our Cluster partners and our critical friend Peter Bullen for their support in our work throughout the project.

Project Information	
Project Title (and acronym)	Open University Learning Design Initiative JISC Project (OULDI-JISC)
Start Date	September 2008 **End Date** May 2012*
Lead Institution	The Open University
Partner Institutions	Brunel University, University of Reading, University of Cambridge, London South Bank University, University of Leicester, LAMS
Project lead and management	Prof Grainne Conole (to August 2011), Prof Martin Weller (from September 2011) / Dr Simon Cross (September 2008 – June 2012)
Project website	http://www.open.ac.uk/blogs/OULDI/
Project blog/Twitter ID	http://www.open.ac.uk/blogs/OULDI/?page_id=35
Design Studio home page	http://tinyurl.com/ckqd52c
Programme Name	Institutional Approaches to Curriculum Design
Programme Manager	Sarah Knight

*The project has been permitted to carry over funds to 2012/13 for dissemination activities

References and Notes

[1] See the personal narrative captured during our Pilots. In particular those about Joe and Kleio which show how student experience improved.

[2] Calculation based on data from the Higher education Statistics Agency

[3] Mundin P. (2009) 'Curriculum Design Process' in Cross, S et al. *A Review of Curriculum Design at the Open University 2008-09: OULDI-JISC Project Baseline Report*

[4] Nine pilot reports have been produced: Papaefthimiou, M. (2012) *Learning Design Initiative at the University of Reading: Pedagogy and technological choices; Reading Pilot Final Report*. Milton Keynes, OULDI Project; Alberts, P., Sharma, A. and Parnis, N. (2011) *Learning Design Initiative at Brunel University: Using a blended learning design approach to optimise the use of technology; Brunel Pilot Final Report*. OULDI Project, Milton Keynes; Galley, R. (2012a) *The impact of early learning design on the efficiency and effectiveness of curriculum design processes and practices: Faculty of Education and Languages Studies Case Study Final Report*. Milton Keynes, OULDI Project; Galley, R. (2012b) *Applying standardised representational frameworks for the pedagogical benchmarking and review of a module: B2S Pilot Final Report*. Milton Keynes, OULDI Project; Galley, R. (2012c) *Using a learning design approach to support evolving design practices at the OU: Support Units Pilot Report*. Milton Keynes, OULDI Project; De Baets, A. and Sheppard, D. (2011) *University of Cambridge Case Study Final Report: 13 Things for Curriculum Design*. Milton Keynes, OULDI Project; Brown, R. (2012) London South Bank University Pilot: Draft Report. Milton Keynes, OULDI Project; Galley, R., Reedy, K., Parker, J. and Thomas, J. (2012) *Using a learning design approach to embedding an information literacy framework; OU Library Services Pilot Final Report*. Milton Keynes, OULDI Project; Nie, M., Witthaus, G., Conole, G., and Armellini, A. (2012) *Learning Design Initaitve at the University of Leicester: OULDI Carpe Diem 7Cs pilot workshops: Leicester Pilot Final Report*. Milton Keynes, OULDI Project.

[5] Agostinho,S. (2008) Learning Design Representations to Document, Model and Share Teaching Practice in Lockyer, L., Bennett, S., Agostinho, S. and Happer, B. *Handbook of Research on Learning Design and Learning Objects* (Information Science Reference, New York). LAMS European Conference, 2008.

[6] JISC Design for Learning Programme.

[7] For example: Brasher, A. Conole, G., Cross, S., Weller, M., Clark, P. and White, J. (2008) CompendiumLD – a tool for effective, efficient and creative learning design. In: *Proceedings of the 2008 European LAMS Conference: Practical Benefits of Learning Design*, 25-27 June 2008, Cadiz, Spain; Cross, S., Conole, G., Clark, P., Brasher, A. and Weller, M. (2008). Mapping a landscape of Learning Design: Identifying key trends in current practice at the Open University. In: 2008 European LAMS Conference, 25-27 June 2008, Cadiz, Spain; Conole, G., Brasher, A., Cross, S., Weller, M., Nixon, S. Clark, P. and Petit, J. (2008) A new methodology for learning design in: *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA)*, 30 June – 4 July 2008, Vienna

[8] Conole, G., Galley, R. and Mundin P. 'Stakeholder Perspectives' in Cross, S et al. (2009) *A Review of Curriculum Design at the Open University 2008-09: OULDI-JISC Project Baseline Report*

[9] Clark, P. and Cross, S. (2009) Case Studies of Staff Design Practices. Milton Keynes, OULDI Project.

[10] Cross, Simon; Clark, Paul and Brasher, Andrew (2009). Preliminary findings from a series of staff surveys on perceptions, attitudes and practices of learning design, in: *ALT-C 2009 "In Dreams Begins Responsibility": Choice, Evidence and Change*, 8-10 Sep 2009, Manchester, UK.

[11] Mundin P. (2009) 'Curriculum Design Process' in Cross, S et al. (2009) *A Review of Curriculum Design at the Open University 2008-09: OULDI-JISC Project Baseline Report*

[12] CMap.

[13] Conole, G. and Culver, J. (2009) *Cloudworks:* Social networking for learning design. *Australasian Journal of Educational Technology*, 25(5), 763-782; Conole, G. and Culver, J. (2010) 'The design of

Cloudworks: applying social networking practice to foster the exchange of learning and teaching ideas and designs' *Computers and Education*, 54(2), 679 – 692; For more information about CloudEngine visit the bitbucket site.

[14] Galley, R., Papaefthimiou, M., Alberts, P., Parnis, N., Sharma, A., and Phillips, A. (2010) Embedding learning design processes: responding to context. Short paper presented at *the ALT-C conference*, Nottingham 7-9 September

[15] See Papaefthimiou, M. (2012) *Learning Design Initiative at the University of Reading: Pedagogy and technological choices; Reading Pilot Final Report*. Milton Keynes, OULDI Project, p33 and p31.

[16] For example, one of our pilot participants after using a more design-orientated approach found there was better student feedback and more creativity, communication and reflection in the design team, however, this had taken longer and so they (apparently instinctively) interpreted this as indicating the team had been 'less efficient'.

[17] Galley, R. (2009) Cloudworks*: Summary Report for Cloudworks Development Phases 1 and 2;* Galley, R (2012) Cloudworks; Phase 3 Report

[18] Galley, R.; Conole, G.; Dalziel, J. and Ghiglione, E. (2010). Cloudworks as a 'pedagogical wrapper' for LAMS sequences: supporting the sharing of ideas across professional boundaries and facilitating collaborative design, evaluation and critical reflection. In Alexander, A.,Dalzeil, J., Krajka, J. and Kiely, R. Cyprus (eds.) *LAMS & Learning Design volume 2* Eds. University of Nicosia Press; Galley, R., Conole, G. and Alevizou, P. (2012) Community indicators: A framework for observing and supporting community activity on Cloudworks, *Interactive Learning Environments;* Cross, S. (2010a) *Exploring spheres of sharing: Analysis of contributions to Cloudworks – Part 1* / Part 2 / Part 3. Blogs Post. 7 March 2010, 9 March 2010 and .

[19] Giddens, A. (1986) The Constitution of Society: Outline of the Theory of Structuration. Polity Press New Edition; Kokotovich, V. (2008) Problem analysis and thinking tools: an empirical study of non-hierarchical mind mapping. *Design Studies,* 29(1), 49-69.

[20] For example some designs for a Middle East role play activity

[21] For more discussion see the Cross, S., Galley, R., Weller, M. and Brasher, A. (2012) OULDI-JISC Project Final Evaluation Report. Milton Keynes, OULDI Project.

[22] For a summary see Brasher, A. (2012) *CompendiumLD: A tool for creating shareable models of learning designs, A Final Report of the OULDI-JISC Project*. Milton Keynes, OULDI Project.We may need to publish this online somewhere so it can be referenced. This evidence was used to guide the resources developed for CompendiumLD and aligns well with other research, e.g. Novak, J.D. & Cañas, A.J. (2008) *The Theory Underlying Concept Maps and How to Construct Them, Technical Report IHMC CmapTools 2006, 01-Rev 012008.* Florida Institute for Human and Machine Cognition; Baylor, A.L., Lee, Y. and Nelson, D.W. (2005) Supporting Problem-solving Performance Through the Construction of Knowledge Maps. *Journal of Interactive Learning Research* 16, 2.

[23] The OULDI project homepage is http://ould.www.open.ac.uk/

[24] Details of these activities are available in our six monthly interim reports

[25] For details of publications visit the project publications on the OULDI website. Publications relating to individual pilots will be located on the relevant Pilot pages.