



## **Compendium Usage by Open University Staff (Aug. 2008 – Feb. 2009)**

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## 1 Summary

The *Compendium* software is a desktop application for creating maps of ideas, resources and arguments, integrated with the Moodle VLE, and interoperable with other systems. This report summarises data gathered over a 6 month project funded by the Office of the Pro-Vice Chancellor for Learning & Teaching Quality, describing the range of staff who have accessed Compendium, their uses of the tool, their hopes and expectations for the tool and its support, some of the issues they have reported when using it, and how they may be resolved.

The key results we report are:

- Discovery of a wide range of usage covering OU business units, education and learning (presented as a Compendium map of staff usage)
- Growing interest in the academic faculties, following its integration with the Moodle VLE in OpenLearn, including support from LTS for an MCT course of which Compendium will be part)
- Development of an e-learning tutorial to contextualise Compendium to OU audiences
- Adoption obstacles which future work should tackle
- Recommendations for next steps

## 2 Background

*Compendium* is an open source, desktop application running on Windows, MacOS and Linux (written in Java). It supports the mapping of ideas and connections in a manner supported by many concept mapping tools, but a distinctive aspect is its visual language for mapping dialogue and arguments — supporting critical thinking about what we might term “contested knowledge”.

Many people (we have ~50,000 downloads) use it as a personal tool for *Mind Mapping*, *Concept Mapping*, *Issue Mapping* and *Argument Mapping*.<sup>1</sup> A facilitation skillset called *Dialogue Mapping*<sup>2</sup> has developed around the use of the tool to mediate and capture discussions during meetings, which has then been combined with more formal analysis approaches into an approach called *Conversational Modelling*.<sup>3</sup>

Compendium is based on hypertext research in the late 1980s on a system called gIBIS, subsequently released as a Windows 3.1 groupware product called *QuestMap*. NYNEX Science & Technology Labs, New York (subsequently Bell Atlantic, now Verizon) began work on a Java version in the late-90s, and the OU’s Knowledge Media Institute was licensed the code in 2002, which it released through the Compendium Institute website.<sup>4</sup> From 2002-05 it was funded by a series of grants from the UK Research Councils and e-Science programme, and from 2006-2012 by the Hewlett Foundation via the OpenLearn and OLnet projects. Through the *Learning Design* (LD) work at IET in 2008, a tailored version called CompendiumLD has been released.<sup>5</sup> Support for the software (downloads now exceed 60,000) and an annual research and practitioner workshop, have been delivered primarily by the KMi team, with CompendiumLD distributed and supported by IET staff. In early 2009, the code was released fully open source under the LGPL license.

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<sup>1</sup> Knowledge Cartography – Preface: <http://books.kmi.open.ac.uk/knowledge-cartography/preface>

<sup>2</sup> Dialogue Mapping: <http://cognexus.org/id41.htm>

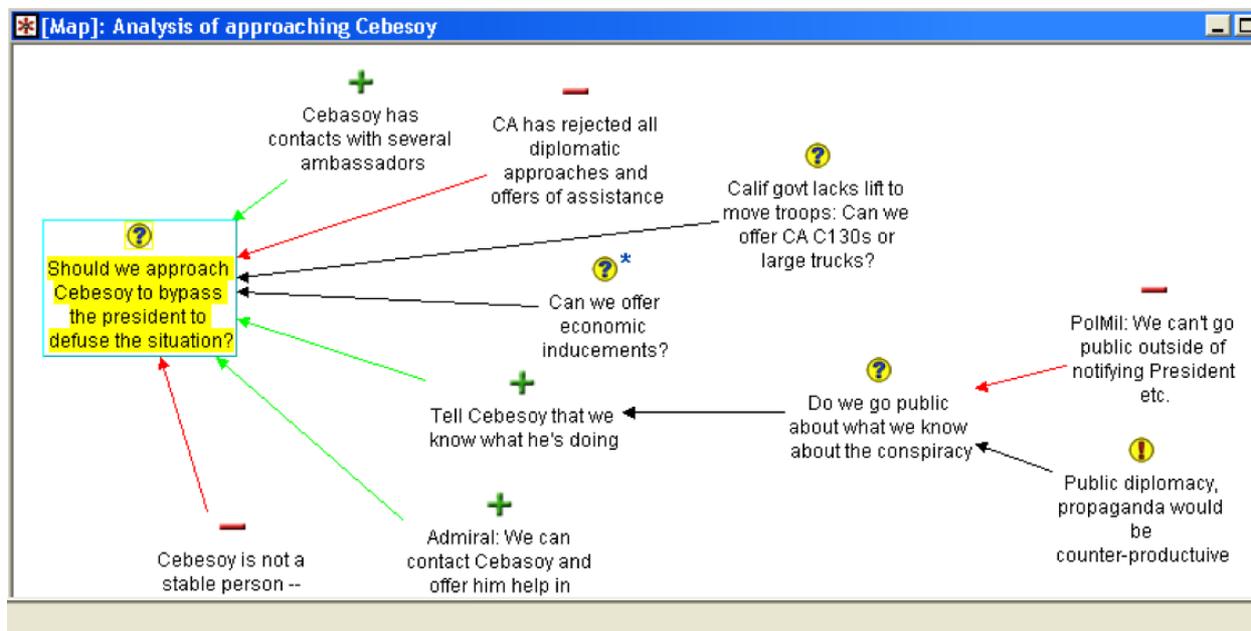
<sup>3</sup> Conversational Modelling: <http://journals.tdl.org/jodi/article/view/16/15>

<sup>4</sup> Compendium Institute: <http://compendium.open.ac.uk/institute>

<sup>5</sup> CompendiumLD: <http://compendiumld.open.ac.uk>

A history of Compendium's development is documented by Selvin,<sup>6</sup> and the Compendium Institute Library has many case studies and research articles.<sup>7</sup>

An example of a Dialogue Map is shown below, capturing a political analysis in a hostage recovery operation, conducted in real time between team members both co-present and online:



Further examples of Compendium's application within the OU are in the Appendix.

### 3 Compendium versions

The software is currently available in three formats:

- Compendium *Classic* (the main public release at the Compendium Institute)
- Compendium *OpenLearn* (a simplified version for OpenLearn users linked from the homepage of each OpenLearn unit)
- Compendium *Learning Design* (with custom icons and functionality for mapping Learning Design patterns, initially hosted on the Knowledge Network, now on its own website)

For a quick introduction to Compendium, we recommend you view:

- *Welcome to Knowledge Mapping with Compendium* screencast on the Compendium OU website: <http://compendium.open.ac.uk/openlearn/screencasts.html>
- Introductory screencast with more developed examples (from the ECOSENSUS international development project) is: <http://projects.kmi.open.ac.uk/ecosensus/software/screencasts/ComplIntro/ComplIntro.html>

We have found that the availability of different versions of the software has, in some cases, led to confusion in terms of where individuals seek relevant help. It is fair to say that the majority of Compendium users may not be aware of either the different versions of the software, nor the multiple locations of relevant help available to them.

<sup>6</sup> Compendium history: <http://knowledgear.blogspot.com/2008/10/more-compendium-history-part-1.html>

<sup>7</sup> Compendium Library: <http://compendium.open.ac.uk/institute/library/library.htm>

Each version of the software contains excellent Help files but the *confused* individual frequently cannot find relevant details to their own issue (often related to a fundamental misunderstanding rather than a technical problem). Some of these types of issues may be resolved by the delivery of a self study unit, accessible to all, that outlines both the theoretical base of knowledge mapping as well as “How to...” sections and examples of previous Compendium applications in addition to the existing Help files.

Fundamentally each version of the Compendium software has the same functionality but how it is accessed, in terms of the user interface, may be different. In the case of Compendium OpenLearn, for example, the functionality of the software is identical to the Classic version but the default interface is much simpler. To access the full functionality one needs to follow a series of instructions to set a user preference. Additionally the OpenLearn export facility is identical to the Power export of the Classic software but has a different “label”. The basic difference with CompendiumLD is the addition of bespoke, Learning Design-based, sets of icons stored as stencil sets.

#### 4 Who has downloaded Compendium in OU?

When a request is received to download Compendium Classic or Compendium OpenLearn, from the websites listed above, details of *who* and *when* are recorded automatically in a simple text file. The former is accessible to designated KMi technical staff and the latter to the OpenLearn website administrator. There is a similar, but separate, procedure for CompendiumLD hosted on the Knowledge Network and administered by a member of IET. All the files generally contain: the person’s name, email address and work affiliation.

It must be noted, however, that there are occasions when this method of data collection is not followed i.e. when the software is loaded onto OU computers by a third party (generally a member of KMi but not exclusively) and, therefore, the new user’s details are not recorded in any of the automatically generated text files. Additionally, of course, false details could also be recorded in the automatic process although there is little evidence of this happening. In other words, the data file for who has downloaded Compendium within the OU is not a comprehensive record. Likewise some of the captured details are not current or accurate in terms of staff identification.

The approximate number of Compendium downloads in September 2008 by OU Staff and students were:

	<b>OU staff</b>	<b>Associate lecturers</b>	<b>OU students</b>	<b>Total</b>
<b>Compendium</b>	170	18	37	225
<b>Compendium OpenLearn</b>	127	20	163	310
<b>CompendiumLD</b>	21	-	-	21
<b>Total</b>	318	38	200	<b>556</b>

**Table 1: Compendium downloads, September 2008**

OU Staff were identified by a recognised OU email address. It must be noted, however, that these figures include a number of staff who no longer are associated with the OU i.e. have retired, have moved elsewhere etc. In other words they are not currently engaged with OU work. This does not mean that they did not use Compendium, nor continue to do so – simply that it has been impossible to determine whether they have, or not used the software. Additionally it is important to record that these figures also represent OU Staff who have *downloaded*

Compendium, not necessarily indicating that they have used the software. The remainder of this report will indicate, where possible, what happened subsequently to this basic information.

The three simple text files were examined and the information, for each version of the software, separated out into: OU Staff, OU Students, and "others". Only the OU Staff details were explored in any further detail. The OU Staff category included information about Associate Lecturer and regionally based staff. Converting the recorded email addresses into identifiable names, locations (and later course associations) proved to be quite challenging, as there is no one database that holds this information. Both the standard OU staff search facility on the Intranet and the similar, but separate, Associate Lecturer database were used to determine the details.

Once the individual records of OU Staff who had downloaded Compendium were identified, the relevant details were recorded on a Compendium map, showing:

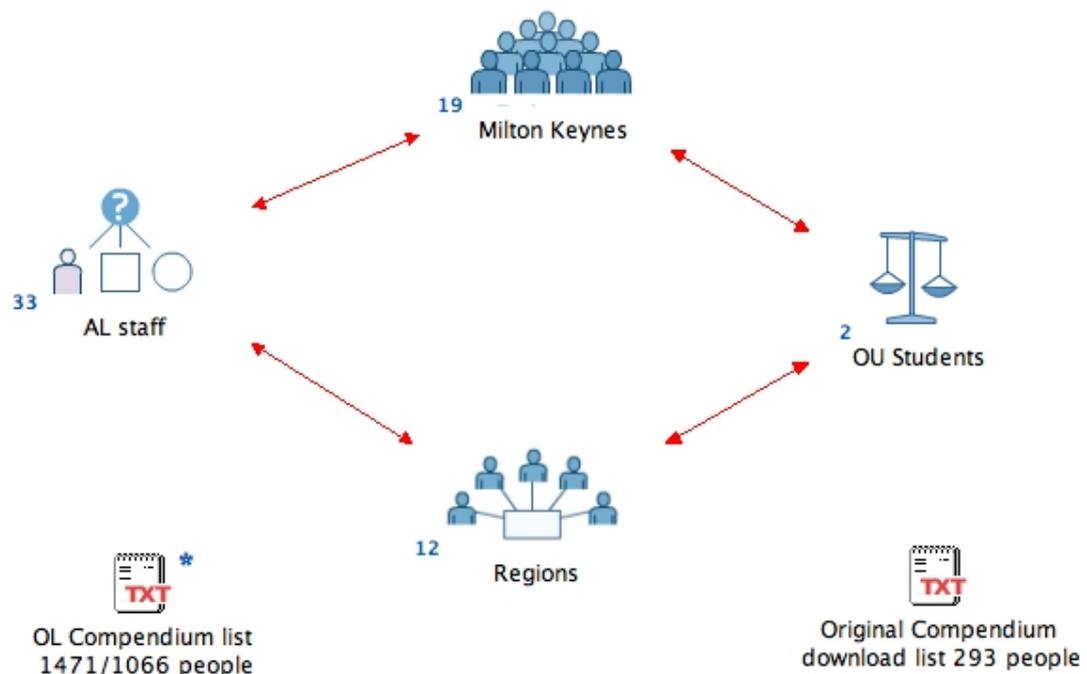
- Type of Compendium download (Classic, OpenLearn, Learning Design)
- Staff geographical location i.e. Milton Keynes or Regional staff
- Individual's affiliation: CAU, AL, Region
- Staff type e.g. Academic, Academic Related, Associate Lecturer etc.
- Course associations (if listed during search for staff details)

The resulting Compendium map can be accessed at:

<http://moodle.kmi.open.ac.uk/moodle/blocks/compendium/browsemaps.php?context=177&id=18>  
(Login as guest if requested, and view the map: "Compendium use at OU")

An example of its format can be seen in Figure 1. The following text outlines how the map was updated, the processes that were carried out to determine further details about actual Compendium usage and how the recording of such material revealed an emergent picture of Compendium usage by staff in the Open University community.

## Compendium use in Open University Community



## Figure 1: Homepage of the analysis map of Compendium use in the OU

Once again trying to quantify some of this information proved to be difficult, particularly with regard to staff title – these seem to be many and varied. On a number of occasions to expedite the process job titles that were similar were amalgamated. Additionally where details were found on a person's record related to course associations this was also recorded but it must be noted that this association was to teaching duties, not to a member of staff's *use* of Compendium. Indeed this level of detail was only found to be consistent in the Associate Lecturer database, but it was not often recorded in the central OU Staff database. As the investigation developed it became apparent that the information in the latter also proved to be inaccurate in many places in relation to a member of staff's current job role or course association (in particular LTS staff but not exclusively).

The aim of this project is to discover who is using Compendium, and in what way, within the OU. One aspect of this became immediately apparent, in relation to the staff who have downloaded more than one version of Compendium. Whilst the numbers are small, it does also indicate that there is an awareness of the different versions of the software and that this may, or may not, contribute to some of the previously mentioned confusion. This information (the software version) also helps identify how OU Staff are hearing about Compendium and can aid the tracking of staff usage. As the information was mapped, a picture of usage began to emerge. It became apparent that there were clusters of staff in various groups within CAUs potentially using Compendium.

Further development of the OU Staff Compendium map has allowed for additional information of 'who, what, where, how' to be recorded. The map is an ongoing process and can only be a snapshot at any one time giving an overall picture of OU Compendium usage. It is hosted in a restricted area as the contents of the map contain personal details of staff as well as their individual responses, where given, to interviews, meetings and surveys. Whilst this information is described in this report, it was not felt appropriate for it to be in the public domain.

Additionally it must be noted that throughout the investigation into who is potentially using Compendium in the OU it has not been possible to contact everyone who has downloaded the software. Thus the Compendium map represents an indication of who *may use* Compendium in the OU rather than a comprehensive list of *who is* using the software. It is recognised that not all Compendium users have been identified despite best efforts to do so.

## 5 Identifying Compendium usage in the OU

Different methods were used to try and ascertain who is using Compendium in the OU. These were used to determine further details from OU Staff who had downloaded the software including:

- A simple questionnaire (distributed by email to a group of staff)
- Interviews with selected staff
- Chance conversations

The questionnaire relating to OU Staff usage of the software contained 6 basic questions:

1. *Why did you download Compendium?*
2. *Did the software meet your expectations?*
3. *What were your greatest support needs when learning how to use the software?*
4. *Have you produced any/many maps? (Please give examples)*
5. *Have you used Compendium in conjunction with teaching aspects of OU courses? (Examples and course codes appreciated) If used elsewhere, please describe.*

6. *Would you be willing to upload/share your resulting maps within the OU community?*

This questionnaire was distributed, via email, to selected members of different CAU groups. It was **not** sent to all OU staff. There were few responses. Indeed there was less than the 'normal' 33% questionnaire response rate. As a form of potential communication/data gathering this method proved not to be effective. It is not entirely clear why this occurred and one can only speculate the reasons: invalid email details; staff had left the University; staff showed little interest, or simply did not bother to reply etc. Some useful information, however, was discovered and included in this report, for example that OU staff had tried to use Compendium to identify:

*“Classifying concepts/planning teaching sessions/summarizing what I have read/creating revision resources for students/creating overviews for students – collaboratively”*

In addition, some 20 direct interviews and a further 30 informal conversations also took place with MK based OU staff. Whilst the questionnaire format did not elucidate much information these methods of enquiry produced much higher quality responses both in terms of realistic (positive and negative) feedback into how people were, or were not, using the software as well as relevant details in terms of how individuals learnt to use the software. For example:

*“We will be introducing our H800 students to Compendium as a tool, possibly for them to use. And in the meantime we in the course team will be using it to help us design the course.”*

Some interviewees were self-taught, some had attended Compendium workshops and a few had used the existing tutorials and exercises. Most had produced more than one map, enjoyed the process of creating a visual record of their work and primarily were reasonably satisfied with the outcome. When encouraged to share their map output with the wider OU community, however, many were either reluctant to do so (too visible?) or could not remember where they had stored their maps.

Details from a previously completed wide-ranging OpenLearn questionnaire, that included questions relating to Compendium usage, were also made available for analysis. It was impossible, however, to identify the comments of solely OU staff. Some responses could be interpreted by their inclusion of OU acronyms or terms but generally it was difficult to determine OU staff.

Other informal data gathering also took place: during chance conversations with colleagues as well as contacts that were made as a result of general enquiries received in KMi about the potential use of Compendium. In terms of data gathering for this project this tended to be quite informal yet proved to be more than informative: there is definite interest expressed by a variety of subject-based teaching staff who wish to explore visual mapping methods both within courses and in the course production process too (visualising the actual process perhaps?) Many expressed their surprise that the software was free, developed in the OU and could be used by anyone i.e. not restricted to course production or LTS staff. Also, that the outputs could be incorporated into Moodle desktops/websites as well as distributed or viewed via OpenLearn (in the sense of a non-traditional delivery mechanism for additional materials). All such information is recorded on the Compendium map (Figure 1).

## 6 Compendium at the OU: current examples

There is growing Compendium use across the OU. The type of use can be categorized, although this is less easy to define as there are many different implementations. A picture has emerged, however, that outlines Compendium applications falling into some broad areas of work:

- **Mapping PhD research**, thesis development and literature reviews
- **Creating Open Educational Resources** (examples in OpenLearn)
- **Resource and Web mapping** including learning journeys
- **Mapping Learning Design patterns**
- **Virtual team working**
- **Research projects** (subject based)
- **Course materials development**: essay ideas, concept, argument, mind and dialogue maps
- **Capturing lecture or presentation contents** (i.e. spoken events)
- **Summarizing OU course materials** (i.e. distance learning materials)

OU Staff who are using Compendium include those who have developed or are developing:

- **Waste & Resources project**: a literature review map has been completed (MCT)
- **ECOSENSUS project**: numerous maps produced (MCT, Science)
- **OpenLearn**: EPoCH map, Project Management map, Welsh History timeline map, plus various maps relating to a number of OER unit contents; Open Educational Resources production process map
- **Multilingual Open Resources for Independent Learning: MORIL project**: capturing materials from a Force Field Framework template and the sensemaking process (European Association of Distance Teaching Universities EADTU & OpenLearn/KMi)
- Various individual **PhD students** mapping their research, developing chapters or capturing literature materials
- **Staff who are students on OU courses** e.g. summarising study materials
- **Lecture materials**: capturing Doreen Massey's recent "Spatial Delights" event at the Royal Geographical Society

Some examples of ongoing projects are given below, illustrating not only the range of applications, but also the way in which we engaged with the users:

1. **Understanding Design (U101), Maths, Computing & Technology (MCT).**  
The chair of U101 met with KMi staff regarding the potential use of Compendium in that course. Subsequently, with PVC-LTQ support, a member of LTS has been employed to integrate Compendium into U101, as part of the OpenDesignStudio. It will be integrated as a design tool for both staff and students to document their deliberation process and decision rationale for projects, to assist the assessment of student process. This is the first OU course in which Compendium will be an integral, LTS-supported element. As a result of this innovation, Compendium has also been adopted in T307 (see point 5 below)
2. **Business Development Team, Student Services.**  
As a result of an enquiry made directly to KMi about potential Compendium use, a seminar was delivered to the Business Development Team of Student Services. This proved to be successful and a catalyst to further Compendium use in that specific group as well as in other related Student Services areas of work (e.g. the VOICE training team). The seminar was followed by email, telephone and face-to-face support (an arranged tutorial update resolving a particular issue whilst the new maps were developed). An

example of the BDT output can be seen in the Appendix. It is understood that the VOICE team have also mapped their training resources.

- 3. Health Education and Training in Africa (HEAT) programme, Health & Social Care.** Meetings took place with the Director of the HEAT programme in HSC to explore the possible use of Compendium maps to capture communication channels and the logging of networking contacts across that programme. This contact also opened up an opportunity to revamp some existing teaching materials (Law details related to a Healthcare course) in conjunction with the OpenLearn project. Both projects are ongoing.

#### **4. Educational Enquiry (E891), Education & Language Studies (FELS).**

A series of meetings took place to explore the possibility of mapping the E891 course and possibly the wider Education Masters programme. There have been some issues with regard to the ECA component of E891, an assessment “pinch-point”, and Compendium is being considered as a visual addition to present the current materials both potentially for the course team to use as well as possibly being introduced to some of the Associate Lecturer staff for planning purposes. This could lead to the potential use by students also in their own ECA development work. Initial exploratory maps of E891 content have been produced and can be seen in the Appendix. These are ongoing projects.

- 5. Innovation & design for a sustainable future (T307) with the Achieving Transformation, Enhanced Learning and Innovation through Educational Resources in Design (ATELIER-D) Project Team, Maths, Computing & Technology (MCT).**

The course team is trialling use of Compendium. It is also part of the wider remit of the ATELIER-D team (7 staff working together to create interesting ways to use technologies to support design learning). The idea is to learn about using Compendium as a tool to support design thinking. The student task within T307 supports Part 2 of TMA01. A short document entitled 'Compendium Getting started' has been created – based upon the existing Compendium Institute tutorial materials.

- 6. Teacher Education in Sub-Saharan Africa (TESSA)**

Some initial work has been carried out to explore and identify some of the common areas where re-use of materials has taken place in both OpenLearn and the TESSA programme. Papers were presented at Open Education 2007 (Utah, USA) and within the OU Learning & Teaching event 2008 outlining a proposed methodology to advise those parties intending on repurposing Open Educational Resource (OER) materials. A “traffic light” Compendium map was produced that provided guidance in terms of a simple process. The work is ongoing.

## **7 Future work**

### **7.1 History first**

Actual use of Compendium in the OU varies from those downloading the software and never using it, through to those who have mastered it and are actively using it in their specific projects. Alongside this one must also note the varied experiences of individuals' pathways of learning to use the software. Some staff attended workshops, some are self-taught or may have had one-to-one tutorials, a few have also used, for example, training materials such as the Compendium Quick Start Guide (OpenLearn); others have used the exercises and tutorials that are included with all versions of the software. The level of support (self-study or personal) does seem to influence the continued use of Compendium. Other factors appear to be confusion with what to do next, other OU work may overtake and diminish motivation as well as perception that developments will be too difficult to pursue.

There are a variety of current materials available to support Compendium usage in the OU. These can be accessed in a number of places:

- The OU [Compendium website](#) with details about:
  - OU applications
  - News
  - Software downloads
  - Screencasts
  - Team
- The [Compendium Institute](#) with details about:
  - Training: Exercises and Tutorial (pdf files)
  - Forum for discussion
  - Application descriptions
  - Compendium community
  - News
- Compendium [OpenLearn](#)
  - Quick Start Guide
  - Forum for discussion
  - Learning Journal option
  - Many example Compendium maps
- Compendium [Learning Design](#) (now on its own [website](#))
  - How to get started document
  - Slidecast to support CompendiumLD use

## 7.2 Recent Compendium support for the OU

Section 7.1 shows the existing support mechanisms for continued Compendium usage in the OU. In summary, comprehensive Help pages already exist as well as a set of exercises and tutorials. In terms of this project, however, the following have also been delivered in addition to the existing resources:

- Tutorials and seminars outlining the use of Compendium (outlined earlier)
- An updated [Web page](#) showing the use of Compendium in the OU
- A [Compendium map](#) visualising who has downloaded the software (restricted access)
- A self-study Moodle based unit gathering all Compendium resources in one place: [Developing your Knowledge Mapping Skills using Compendium](#) (ongoing work)

At this point, however, an important point to emphasise is the *priority* and *direction* that OU colleagues should be given in terms of where to find help, support and information about the software. For most OU colleagues this focus is primarily on the OU Compendium website (described in section 7.1) since there is no central person or place currently where staff can make their enquiries. The latter needs to be addressed if Compendium is to be adopted by a wider range of colleagues as well as supporting those who are currently exploring or using the software.

## 7.3 Tackling adoption obstacles

One approach to tackling some of these adoption issues is to offer a more comprehensive set of training materials and in multiple formats i.e. digital, text, audio, video, and screencasts as

appropriate. Targeting particular issues in the discussion forums and/or extending the Frequently Asked Question (FAQ) areas may also help some new (and developing) users.

Another aspect of the development of training materials is the incorporation of information about Knowledge mapping as well as current OU (& other) application examples. This has been achieved recently in the new OpenLearn-based Moodle unit "[Developing your Knowledge Mapping Skills using Compendium](#)" which is designed to complement and take further the information presented in the introductory OpenLearn Quick Start guide. This is an ongoing work.

Thirdly, and perhaps equally importantly, there is the human aspect to the Compendium learning journey. In summary: many OU colleagues simply do not know *where* to turn to for help. Whilst the respective Compendium websites clearly state contact email points (names are not given), where and how to resolve most issues, and the need to talk to an individual (phone or face-to-face) continues to grow in demand — yet not be settled for many individuals. As previously mentioned there is no central person or place to whom or where one can direct enquiries.

Thus, a dedicated Compendium point of contact, arguably within the existing OU helpdesk infrastructure, would assist significantly. With the integration of Compendium within forthcoming courses, those students will presumably have such a facility to call on, but it is not clear if this will be available to other users. Indeed such a person could also further develop the training materials, OpenLearn unit as well as update and further analyse the Compendium map showing who within the OU is using the software. Continuing to build a picture of Compendium use in the OU is an important aspect of furthering use of the software, promoting its training materials and identifying future applications to meet the needs of OU colleagues – particularly in respect of potential Compendium use within OU courses as well as planning or developing them.

Additionally, and as outlined in the map, many colleagues continue to seek to use Compendium in a variety of research and development projects too. One recent example being the approach from the Library to KMi to arrange an interactive “road show” event highlighting the current digital tools, including Compendium, that can be used to create a vision of the Library of the future. Compendium has been used, at the scoping stage, to capture both the family tree structure of the Library as well as a method of recording what digital technologies are currently being used by the Library staff in their work. This map of the Library has proven to be not only a catalyst to the further development of the road show event, but has helped both Librarians and KMi staff to visualize the current situation and identify potential future advance in the use of appropriate technology.

## **8 Summary and recommendations**

In summary, Compendium has developed since 2000 into a robust tool that enables its team to break new technical and conceptual ground, funded by public research grants. It lacks some of the polish of a commercial product (since there is less resource from research funding to address some of these issues), but it has a global user community happy to use a leading edge tool with some rough edges. We will continue to seek external funding for research-oriented technical development, wherever possible targeting functionality that will be of value to the OU’s mission (see for instance the final example in the Appendix illustrating video annotation, which we anticipate will of wide interest to OU researchers, educators and students).

This project has established that Compendium continues to grow in usage across the OU, with a corresponding growth in demand for support, both from digital resources, and face-to-face. As it continues to add value to the OU’s core business (internal and external facing), there are steps that can be taken to scaffold its integration with the OU infrastructure — both technical and organizational.

## **8.1 Compendium portal: students**

With respect to the specifics of delivering Compendium to a student cohort, the first step was its simplification and integration into Moodle for OpenLearn. The next significant step will be its integration in MCT's U101 presentation, after which a review could reflect on whether this approach and infrastructure can be generalised for other courses.

## **8.2 Compendium portal: staff**

The various locations and formats of current support materials available online reflect its organic growth and adoption within the OU, but can be confusing. Further effort can be invested in improving the *compendium.open.ac.uk* portal as the "one stop shop" to help staff see potential uses of relevance, and get going as quickly as possible, possibly finding peers who share their interests. SocialLearn may be an obvious platform to introduce in this respect.

## **8.3 Compendium support: students**

With respect to students, we assume that the OU's helpdesk team will be trained in Compendium to support U101 students, thus engaging the OU's normal user support infrastructure with the tool.

## **8.4 Compendium support: staff**

With respect to staff support, there is clearly a case for extending the work initiated in this pilot study, to continue face-to-face Compendium support, to track its usage, and to feed requirements into the development team. The person(s) engaged in this role need to be visible in the OU community, and accessible both face-to-face and online to the OU community, which we define broadly, based on the results of our survey: Academics, Associate Lecturers, Regional Staff, and Strategic/Administrative staff using it for knowledge mapping/information management.

## **8.5 Compendium technical development and academic adoption**

The appointment of an LTS developer to work on Compendium for U101 is a significant development in extending technical development resource beyond KMi and IET, to LTS. Our recommendation is that Compendium now becomes part of the software portfolio that LTS can present to the faculties, in order to assess demand for it.

Clearly, if Compendium adds demonstrable value to U101, this will build its credibility with other course teams interested in an OU-supported tool that supports reflection, and which helps to capture students' individual or collective *process*, not simply the final *product* (e.g. the submitted TMA). We see this as holding exciting possibilities: while fostering reflective process, and explicitly assessing it, has been central to practice-based pedagogy, it is arguably part of the pedagogical shift that many disciplines are now seeking to make. It also meshes with our mission to develop learners with an appropriate set of generic skills/habits of mind for lifelong learning, both formal and informal.

## 9 Bibliography

Compendium is the subject of research in educational contexts, both at the OU and beyond. Interested readers may wish to follow-up the following evaluations of the tool's usage, as well as related research within the fields of computer-supported collaborative learning/argumentation, argument mapping, critical thinking and knowledge cartography. The following bibliography brings together many of the published papers, journals and books that have covered the wide variety of use of Compendium by OU staff.

### *Background sources:*

Okada, A.; Buckingham Shum, S. and Sherborne, T. (Eds). **Knowledge Cartography: software tools and mapping techniques**, London: Springer-Verlag, 2008, ISBN: 978-1-84800-148-0. <http://books.kmi.open.ac.uk/knowledge-cartography>

Kirschner, P.; Buckingham Shum, S. and Carr, C. (Eds.) **Visualizing Argumentation: Software Tools for Collaborative and Educational Sense-Making**. London: Springer-Verlag, 2003, ISBN 1-85233-6641-1. <http://www.visualizingargumentation.info>

### *Compendium and Open Educational Resources:*

Okada, A. and Tomadaki, E. and Buckingham Shum, S. and Scott, P. (2008) **Fostering Open Sensemaking Communities by Combining Knowledge Maps and Videoconferencing**. The European Journal for the Informatics Professional UPGRADE, 9 (3). pp. 27-36. ISSN 1684-5285. <http://kmi.open.ac.uk/people/ale/journals/03upgrade2008.pdf>

Buckingham Shum, S and Okada, A. (2008) **Knowledge Cartography for Open Sensemaking Communities**. Journal of Interactive Media in Education (10). ISSN 1365-893X. <http://jime.open.ac.uk/2008/10>

Okada, A. and Connolly, T. (2008) **Designing Open Educational Resources through Knowledge Maps to enhance Meaningful learning**. International Journal of Learning Technology, 15 (7). pp. 209-220. ISSN 1477-8386

Uren, V., Buckingham Shum, S.J., Li, G. and Bachler, M. (2006) **Sensemaking Tools for Understanding Research Literatures: Design, Implementation and User Evaluation**. *Int. Jnl. Human Computer Studies*, 64, (5), pp.420-445. <http://oro.open.ac.uk/2954>

### *Detailed evaluation studies:*

Okada, A. and Buckingham Shum, S. (2008) **Evidence-Based Dialogue Maps as a research tool to evaluate the quality of school pupils' scientific argumentation**. International Journal of Research & Method in Education, 31 (3). pp. 291-315. ISSN 1743-727X. <http://kmi.open.ac.uk/people/ale/journals/04ijrma2008.pdf>

Carr, C. (2003). Using Computer Supported Argument Visualization to Teach Legal Argumentation. In: Kirschner, P.; Buckingham Shum, S. and Carr, C. (Eds.) **Visualizing Argumentation: Software Tools for Collaborative and Educational Sense-Making**. London: Springer-Verlag, 2003, ISBN 1-85233-6641-1. <http://www.visualizingargumentation.info>.  
Revision to: Computer-supported collaborative argumentation: Supported Problem-Based Learning in legal education. Proc. Euro-CSCL 2001, Maastricht, 22-24 March 2001. <http://www.ll.unimaas.nl/euro-cscl/Papers/25.pdf>

*Internal Knowledge Network report:*

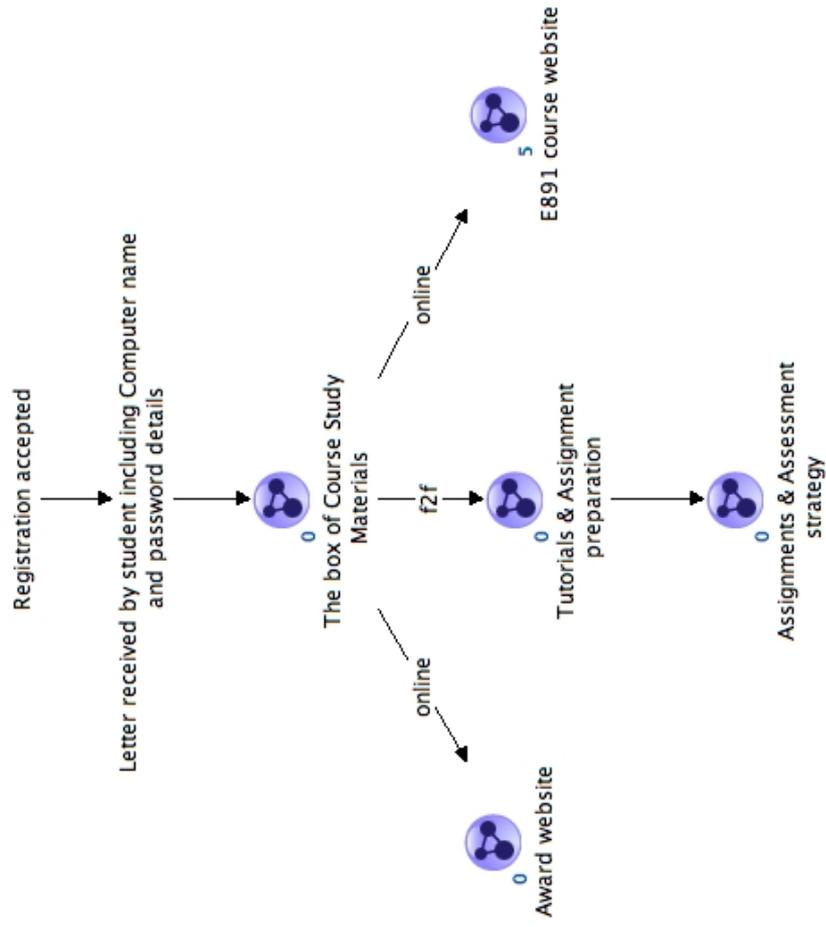
Connolly, T. (2007) [Creating Open Educational Resources. An uncharted journey?](#) OpenLearn Working Paper 4, Open University.

A web search on [computer-supported collaborative argumentation cscI](#) reveals many more publications and groups working in this field

## 10 Appendix: Examples of Compendium applications at the OU

An example of a course based map: E891 resources overview

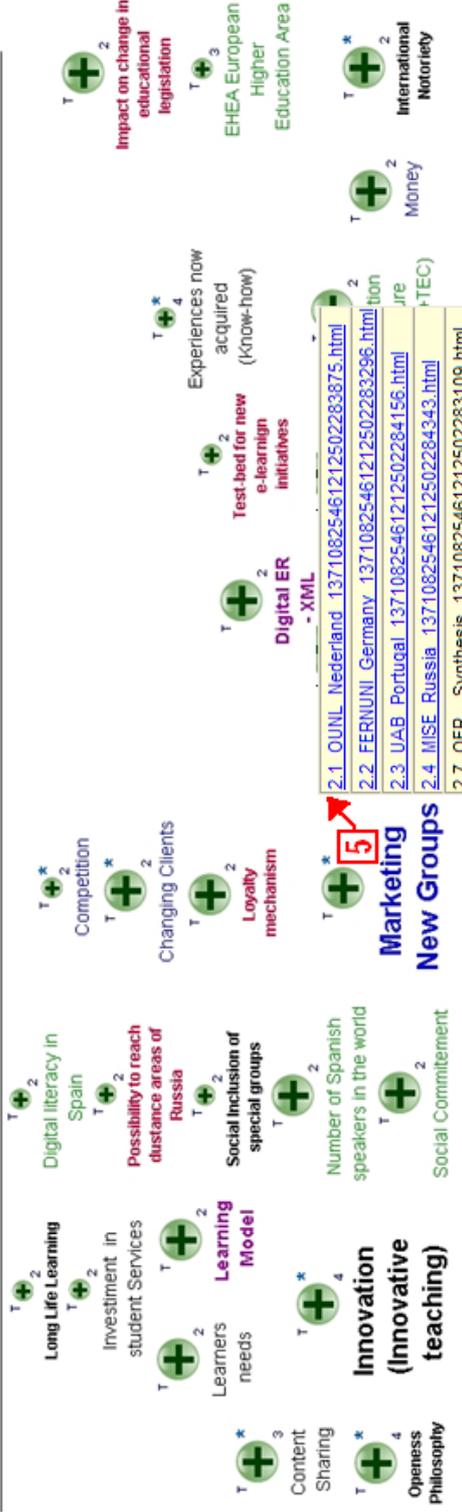
### E891 Educational Enquiry



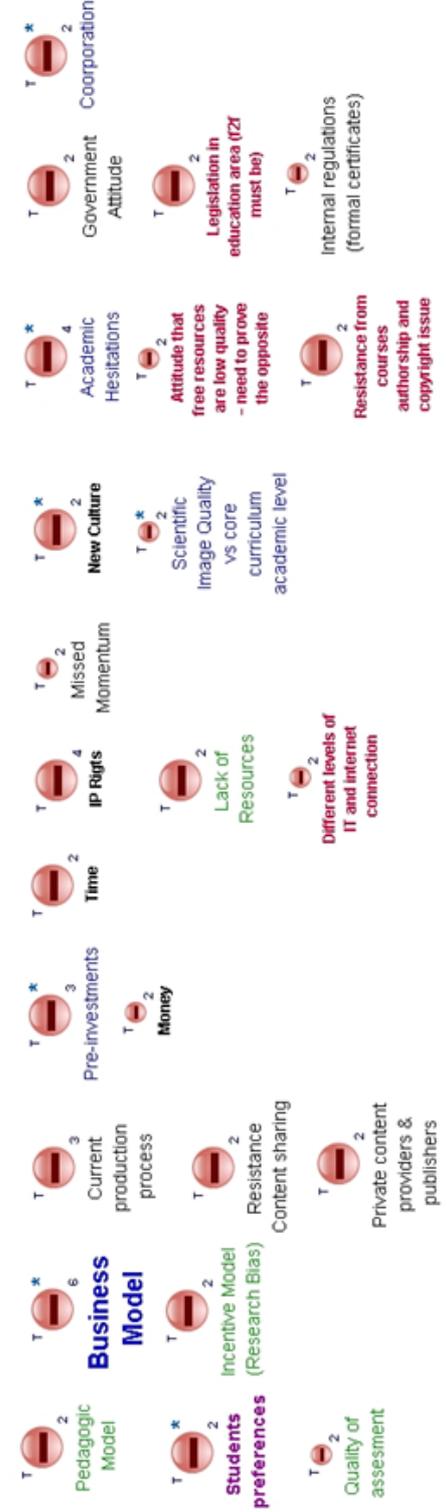
# An example from the MORIL project maps

## OER SEMINAR - Discussion

-   
 2.1\_OUNL  
 Nederland
-   
 2.2\_FERNUNI  
 Germany
-   
 2.3\_UAB  
 Portugal
-   
 2.4\_MISE  
 Russia
-   
 2.5\_UNED  
 Spain
-   
 2.6\_UOC  
 Spain
-   
 2.7\_OER  
 Synthesis



## OER Force-field synthesis



An example of EPoCH maps from DSE212 Exploring Psychology course (OpenLearn)

TIME LINE

FIGURES

METHODS

PERSPECTIVES

TOPICS

CONTEXTS

ACTIVITIES

LABSPACE

HELP

### EPoCH - Exploring Psychology's Context and History

**Options**

TIME LINE

FIGURES

### Psychological Researchers

**Psychological Researchers across time**

### Psychological Researcher

**Mary Ainsworth**

**Methods**

- Ainsworth
- Bowlby
- Chaffetz
- Ekblom
- Fraiberg
- Frost
- Jarrett
- LeVine
- Kanner
- Klaffki
- Malin
- Moskowitz
- Roberts

**Perspectives**

- Developmental
- Attachment

**Topics**

- Attachment

**Contexts**

- Tantrick

**Influences**

- Bowlby
- Frost
- Sproul
- Mein

**Text:** In 1954, Mary Ainsworth left for Africa, and moved attachment theory forward through her observations of 28 mothers and their children in Uganda. She noted that, although there were some important differences in how children behaved when Ainsworth later moved to Baltimore, USA, and spent a long period closely observing and recording the behaviour of 15 infants and their mothers. It was during this time that she clarified her attachment categories by subdividing the insecure classification into two.

**Text:** Case studies in clinical medicine involve account of careful clinical observations.

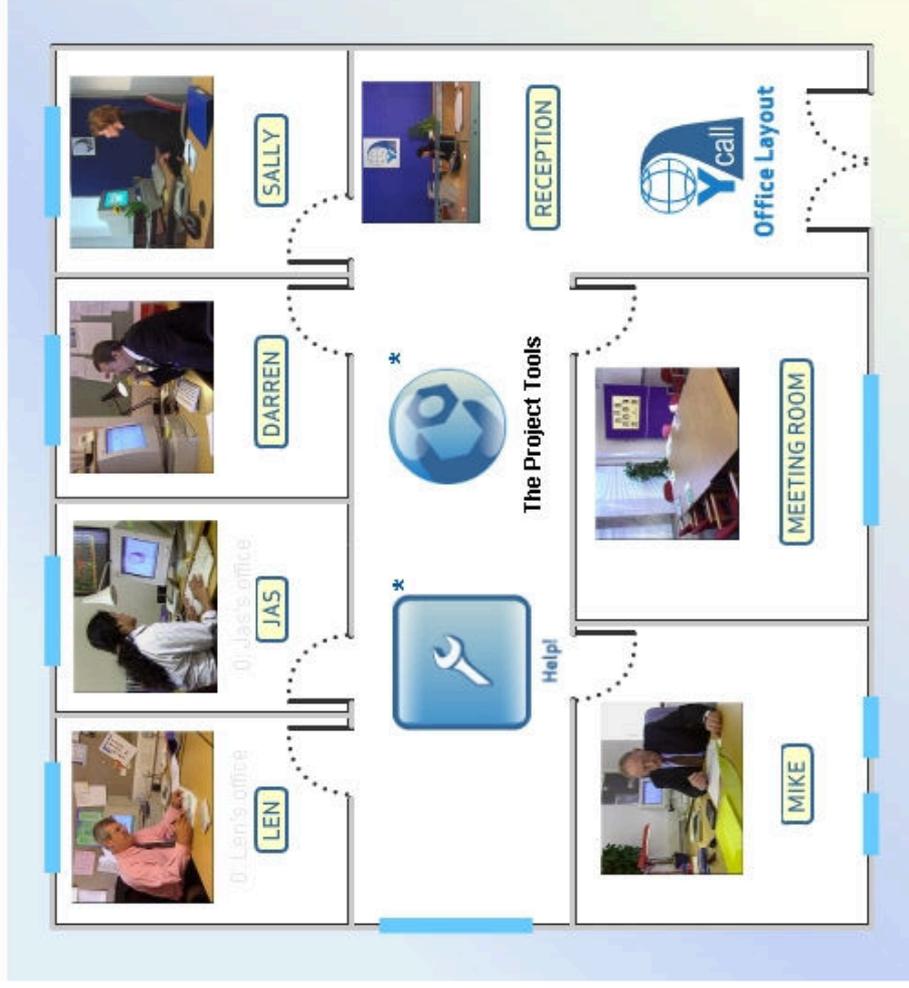
**Text:** Mary Ainsworth was influenced by Bowlby, Freud and Klein.

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## An example of the Project Management maps developed for B713 (OpenLearn)

- [▶ B713 PM Case study materials](#)
- [▶ 0: Introduction](#)
- [▶ 1: The Project Brief I](#)
- [▶ 2: The Project Brief II](#)
- [▶ 3: Planning](#)
- [▶ 4: Making it happen](#)
- [▶ 5: Crises](#)
- [▶ 6: Handover](#)
- [▶ 7: Evaluation](#)
- [▶ The Project Tools](#)
- [▶ Help](#)
- [▶ Licence agreement](#)

### 0: Introduction



Each office may contain materials. Click on the office photos to reveal a sample of the likely contents of the offices.

This case study offers you the opportunity to engage with a fictitious project set in a realistic context. It is set in a call centre company called Y Call.

At each stage of the case study you have access to case study materials which you may engage with in any order. They are to be found in different Y Call offices by clicking on the office layout to your left. You will use these resources to complete a task at each stage of the case study.



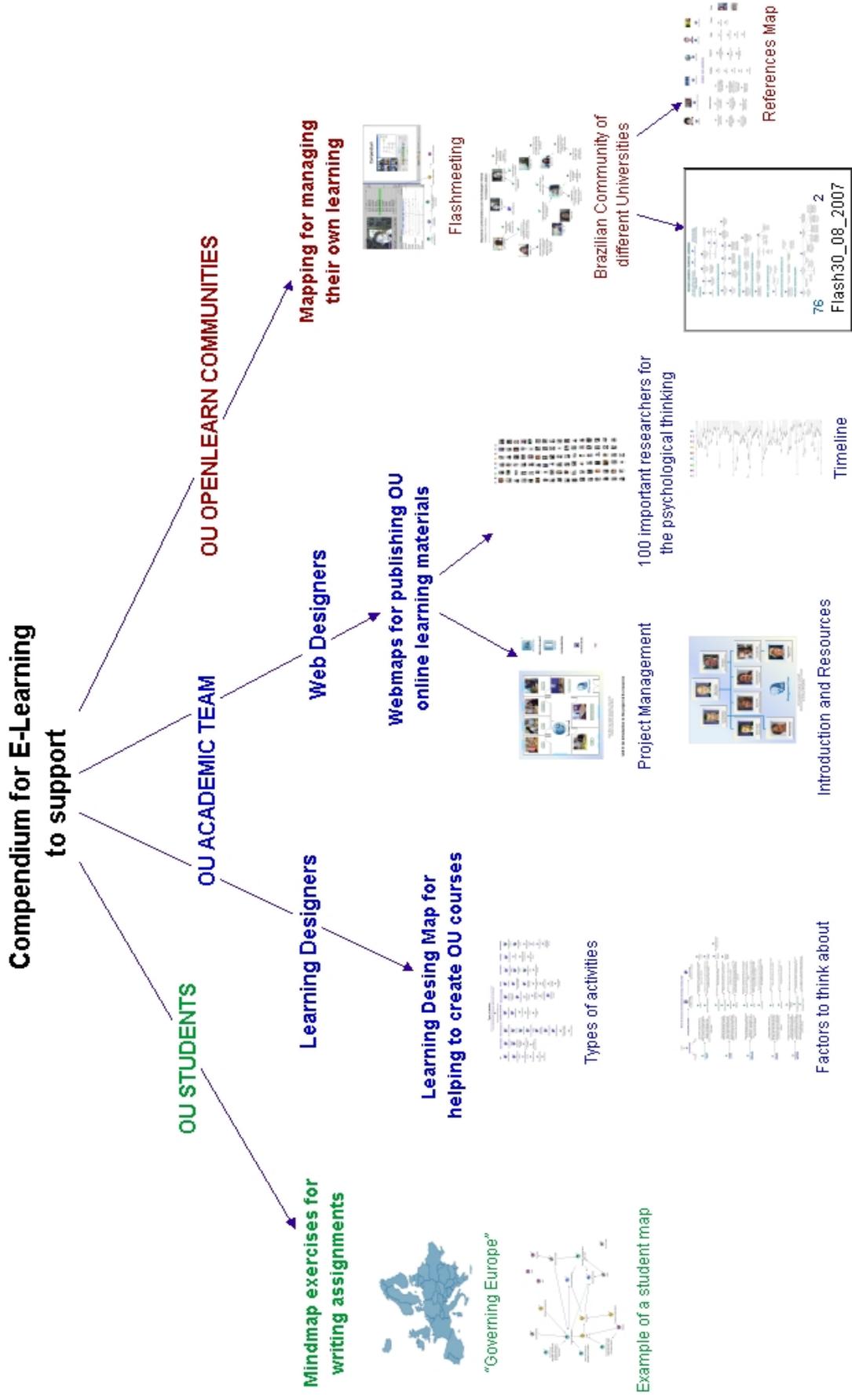
An introduction to the workbook

There will also be further links to other Project Management Resources which introduce relevant project management frameworks and approaches.

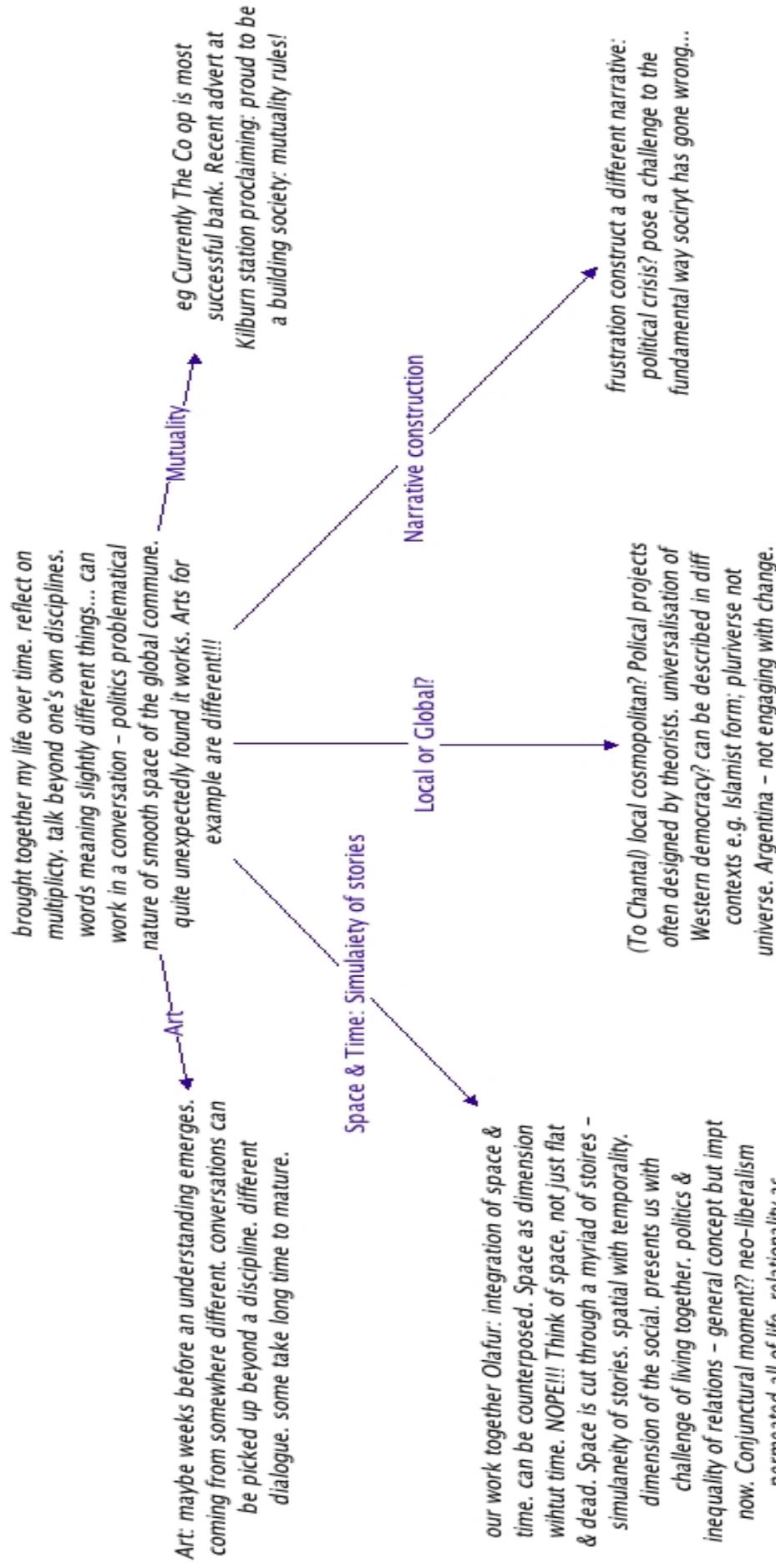


Learning Journal Guide

An example Compendium map describing eLearning in the OU



An example map of Doreen Massey's response during her Spatial Delights event, Royal Geographical Society, 11<sup>th</sup> March 2009



It is now possible to annotate ideas and connections over video clips (from KMI's e-Dance project)

