Visualising the process and products of learning design
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1 Introduction
A learning activity can be conceptualised as a specific interaction of learners with zero or more other's using specific tools and resources, orientated towards specific outcomes (Beetham, 2007). Evidence we have gathered indicates that designing learning activities is inherently messy, creative and iterative, and that choosing the best combination of tools, resources and methods for a particular context is difficult (Conole et al., 2008). In the Open University and other distance universities, design is typically carried out by teams composed of people with a variety of specialist skills including academics, programme officers, graphic designers, editors and project managers.

2 Aims
Our aim is to research, design and implement a range of tools to support individuals to design effective learning activities, and to enhance the effectiveness of design teams. One approach we have taken is to apply the concept of 'knowledge cartography' to learning design, building on previous work on other visual representations of learning designs (e.g. UML activity diagrams, LAMS). This has led to the development of a software tool CompendiumLD through which we are exploiting two aspects of mapping, the product and the process.

- As products maps can visually represent complex relationships between objects, which highlight key elements and connections for a particular purpose
- Creating a map forces a person to externalise their design thinking

3 Evidence
Empirical evidence gathered to inform the development of CompendiumLD includes the collection of user requirements (Nixon, 2007), case studies (Wilson, 2007), 12 semi-structured in-depth interviews, and a evaluation of workshops and focus groups (Cross, 2008). In January 2009 we began in-depth evaluation of holistic course design, which has and will involve studying course teams' use of visual representations during the design process over a period of 9 months. Examples from our evidence base are shown in the main panel on the right as speech bubbles.

4 In use
Examples illustrating how CompendiumLD can be used within the design process are provided by snapshot 1 and snapshot 2. Snapshot 1 illustrates an early stage of the design process, while snapshot 2 a later stage. In snapshot 2 a more detailed description has been generated and some of the issues that arose in snapshot 1 have been resolved.

5 Conclusions and future work
The qualitative data we have gathered so far indicates that generating a visual representation helps to clarify designers’ intentions, and aids communication of those intentions. Iterative development of the tool and methods is planned for 2009-10, including trials across a range of UK universities. So far our work has focused on the representation of learning activities within a module or course. We will be looking at applying visual representations at different levels, e.g. across degree programmes, and requirements gathering workshops to inform this are planned for later in 2009.