



Orientation Guide

Designing for learning

By Gráinne Conole

A course is usually made up of a range of learning activities; reading an article or listening to a recording. Often there is a mix of tasks - reading or viewing on your own, then discussing with other students in class or via an online forum. Each activity has a 'design' associated with it, Alan and I will be focusing on the 'design' aspects of activities in this part of the conference and showing a range of different ways in which it is possible to make the design process more explicit and to help teachers to make better use of new technologies. The materials in this handout are adapted from some learning materials that are being produced as part of a new course, H800 we are developing at the Open University.

1. What is learning design?

The implicit nature of teaching practice

Design is an inherent part of any teacher's practice (preparing for teaching sessions, or creating learning materials, activities, and assessments), indeed it is so core to what teachers do it's often taken for granted; it's assumed that it 'just happens'. However, 'design' is so embedded in a teacher's practice that it tends to be implicit – not formally articulated or externalised for others, apart from at a relatively superficial level in the course syllabus or lesson plan.

Once you start to focus on design, and in particular try to understand what design is and how it occurs, a number of questions come to mind. How do teachers prepare their teaching materials, teaching sessions? What decisions do they make, how do they decide which activities, resource and technologies to incorporate? Where do they get advice and help on the process? These are some of the questions we will be considering over the next two weeks.

A critical eye on the design process

The focus of this session in the conference is to look critically at the design process. The sheer quantity and variety of new technologies now available and the ways in which they can be used, presents a daunting prospect to teachers wanting to use these effectively and innovatively in their teaching. In particular we will argue that with the range of new technologies now available and a multitude of ways in which they can be used to support teaching and learning there is a need for a better understanding of the design process and clearer mechanisms to help guide teachers in making decisions about the creation of new learning activities. It will give you an overview of new approaches to design which help teachers and designers make choices on how to incorporate new technologies to facilitate learning activities.

Schemas for design

You will get the opportunity to try out a range of different ways of thinking (schema) about the design process – which can be used to help teachers map pedagogy, technologies and the activities students are undertaking. You will also look at how design ideas can be represented and shared and in particular the advantages and disadvantages of different forms of representation.

Why focus on design at all?

In recent years there has been a growing interest in trying to better understand teachers' design processes and to make them more explicit.

There are a number of reasons for this, but two are worth noting.

- Firstly, by making the design process more explicit it can be more easily shared with others, which means good practice can be transferred.
- Secondly, there are now such a diverse range of resources and technologies available which can be potentially used to support the teaching process that teachers need clearer guidance to help them find relevant tools and resources and support on how to incorporate them into the learning activities they are creating.

'Learning Design' is the term most commonly used to describe the research and development activities associated with better understanding and support teachers' design practices. However it should be noted that the term is not without controversy – and overlaps to some extent with other terms such as instructional design, curriculum design, and course design.

Readings, resources and activities

In addition to this overview document, there are a number of readings, resources and activities. Don't feel you have to work through all of these, you might want to adopt more of a pick and mix approach and focus in on using some of the materials around topics that you are particularly interested in. Here's a list of the full set of readings, resources and activities, to help you decide on which ones you want to focus on.

- **Activity 1: An overview of the OU Learning Design Initiative.** This short powerpoint presentation with audio will give you an overview of the work we are doing at the Open University as part of our learning design initiative.
- **Activity 2: Strategies for design.** A chance to reflect on your own experience of design, through discussion with us and other conference delegates in the forum.
- **Activity 3. An overview of CompendiumLD.** This short powerpoint presentation with audio will give you an overview of CompendiumLD, a tool for visualising designs.
- **Activity 4: Reading.** Read the article by Conole, Brasher, et al. (2008) on the development of CompendiumLD.
- **Activity 5: Watch.** Watch the slidecast produced by Paul Clark and Simon Cross on how they used CompendiumLD to map out a learning activity.
- **Activity 6. Visualising design.** An opportunity for you to use a visualisation tool, CompendiumLD, to map out a learning design. You will also take part in a discussion in the forum with other delegates and us on your experience of using the tool and a comparison of each other's designs.
- **Activity 7: An overview of Cloudworks.** This short powerpoint presentation with audio will give you an overview of the Cloudworks site we have created for sharing learning and teaching ideas and designs.
- **Activity 8: Reading.** Read the article by Conole, Culver, et al. (accepted) on the development of the Cloudworks site.
- **Activity 9. Finding and sharing learning and teaching ideas and designs.** In this activity you will explore a range of resources that are available on the Internet that can be used to help with creating learning activities or planning a design. You will also use a social networking site for designs, Cloudworks.
- **Activity 10: An overview of schema for design.** This short powerpoint presentation with audio will give you an overview of the work we are doing at the Open University trying to develop new schema for design.
- **Activity 11: Reading.** Read the Ariadne article by Conole (2008) on pedagogy schema.

- **Activity 12: Reading.** Read the forthcoming article by Conole in Lee and McLoughlan on the implications for education of new web 2.0 technologies.
- **Activity 13. Mapping digital media to four facets of learning.** You will use a schema for mapping activities to different types of learning.
- **Activity 14. Mapping tools and activities to pedagogy.** You will use a second schema for mapping tools, activities and pedagogies.
- **Activity 15. Comparison of different schemas for design.** Alan Mason has been showing you the Hybrid Learning Model they have developed at Ulster. You will have the chance to reflect on your experience of all these schemas and compare your views with others in the forum.
- **Activity 16. Reading.** Read the paper by Conole in Lockyer et al. on mediating artefacts.

Why focus on design?

So why is it important to pay so much attention to the design process? Precisely because it is core to the teaching process, and to the ultimate learning experience students have as a result of how a teaching session or some learning materials are designed. In the creation of learning materials and/or services for use by students studying independently or in the guidance and facilitation by teaching staff of learning by students in the lecture hall or tutorial room, the impact of good design makes itself felt immediately. Often working intuitively or with tacit knowledge, the expert teacher can produce the apposite example to illustrate a complex concept or advise on the use of formative assessment at the appropriate point in a long chain of argumentation to anchor a critical perception in a student's mind. Moving the pedagogic skills of the expert teacher from the realm of tacit to explicit knowledge and capturing the essence of such performance for reuse in other contexts by other staff are the objectives of the study of Learning Design.

'Learning activities' and 'learning designs'

Two key concepts, namely 'learning activities' and 'learning design', are key and it is worth defining these from the outset. *Learning activities* are those tasks that students undertake to achieve a set of intended outcomes. Examples might include:

- finding and synthesizing a series of resources from the web,
- contributing to a 'for and against debate' in a discussion forum,
- manipulating data in a spreadsheet,
- constructing a group report in a wiki, or

- summarizing the salient points of a podcast.

Beetham views learning activities in relation to the design process:

as a specific interaction of learner(s) with other(s) using specific tools and resources, orientated towards specific outcomes (Beetham and Sharpe, 2007 p. 28) .

Learning design refers to the range of actions associated with creating a learning activity and crucially provides a means of describing learning activities. Agostinho (2006) describes it as 'a representation of teaching and learning practice documented in some notational format so that it can serve as a model or template adaptable by a teacher to suit his/her context'.

Learning design provides a means of **guiding the creation** of learning activities, as well as **representing learning activities** so that they can be **shared** between tutors and designers. For example, this might consist of illustrating learning activities in an easy to understand way (as a diagram and/or text) so that they can be

- shared between a teacher and a designer,
- repurposed from one teacher to another,
- serve as a means of scaffolding the process of **creating new learning activities**,
- provide the tools for practitioners to capture their innovative practice in a form that is easy to share so that they have ownership of the problem and solution. Such a scaffold might be in the form of an online tool to provide support and guidance to a teacher in the steps involved in creating a new learning activity – including tips and hints on how they might use particular tools.

Different interpretations of 'learning design'

'Learning Design' as a term originated in the technical community and began to gain prominence around 2004, following the development of the educational mark-up language at the Open University of the Netherlands. This was taken as the basis for attempting to create a learning design specification, as part of a broader body of work on technical specifications.¹ The aim of this formal specification was to provide a framework for describing teaching strategies and learning objectives in a method that allows easy interchange between e-learning providers.

However, since then it has been appropriated by others and as such there is some confusion surrounding the term, since it has become popular as an expression that in a more general

¹ The 'IMS consortium' is particularly active in this area – see <http://www.imsglobal.org/specifications.html> for more details

sense is synonymous with instructional or course design, for example someone might ask 'what is the learning design underlying this course?' They do not expect to be presented with XML code when they ask this, but are seeking some rationale behind the course design, for example an explanation that relates learning outcomes to pedagogy and content. This extension of the term partly reflects the interest the specification has generated. In order to distinguish between this more general use of the term and reference to the IMS specification itself some suggest the convention of using "learning design" (small 'l', small 'd') when we are talking about the general concept and "Learning Design" (Capital 'L' and 'D') when referring to the concept as implemented in the IMS specification.

The value of learning design as an approach

You may still be wondering 'what on earth is learning design and why should I be interested in learning about it?' As the critical reader for the H800 material from which this is derived, Perry Williams, suggested the following: you can think of it as 'a fancy word for what you were doing every day of your professional life: working out what you were going to teach and how you were going to teach it. The difference is that with first distance learning and now e-learning we've had to make that process more explicit, because without face-to-face contact you can't fix things on the fly if they start going wrong'. This is the view Beetham takes in her chapter (p 37), when she talks about the possibility of learning design existing as unarticulated shared expertise. The point is to become aware of it, to do it better – and of course to share the practice and the results.

There are significant advantages in the instilling of the tenants of good design across the teaching and support staff of an educational institution or within a training context:

- a clearer perception by the teacher of good examples of teaching or learning support
- more efficient use of the teacher's time
- more efficient and effective learning on the part of students
- more useful sharing of pedagogic insights across the teaching and support staff, and across disciplines.

Capturing practice

To aid the perception, capture and communication of good teaching practice (in a form that can be easily "read" and "digested") requires the creation of a textual or graphical "space" and within it a "vocabulary" of pedagogical elements in terms of which the examples can be described. From there the rules of combination of these elements, to create a learning task, and groups of such tasks, has to be articulated. What is captured depends to some extent on the intended audience for the design – i.e. the same 'design' would need to be represented very differently to a technical developer who was then tasked with converting

the design into a set of webpages, to teacher who wanted to use the design as the basis for setting up an activity or for a student who wanted to work through the elements of the design.

Summing up so far...

So learning design refers to the range of activities associated with creating a learning activity and crucially provides a means of describing learning activities. Internationally, a number of research groups are actively working in the area of learning design with researchers trying to find ways to help teachers create better learning experiences for students which are pedagogically grounded and which make innovative uses of new technologies.

Three recent edited collections provide a good starting point on learning design, and between them have contributions from most of the current major players in this area.²

Beetham and Sharpe (2007) is probably the most accessible of the texts; providing a practitioner-focussed collection:

Rethinking Pedagogy for a Digital Age provides a critical discussion of the issues surround the design, sharing and reuse of learning activities. It offers tools that practitioners can apply to their own concerns and incorporates a variety of contexts including face-to-face, self-directed, blended and distance learning modes, as well as a range of theories of learning and roles of technology.

Activity 1: An overview of the OU Learning Design Initiative

1. This short powerpoint presentation with audio will give you an overview of the work we are doing at the Open University as part of our learning design initiative.

[end of activity]

Activity 2: Strategies for design

1. Consider the following questions about strategies for design. If you are not directly involved in teaching or in devising courses, you should think about the modules, classes or programmes that you support in some way.
 - How do you (or your teaching colleagues) currently design courses?
 - How do you and/or your teaching colleagues get new ideas?
 - What resources and support are used?
 - What issues do new technologies raise for teaching and learning?
 - Share your initial views of learning design on the Forum

[end of activity]

² See the further readings section for more on the other two edited collections.

2. Starting to make design more explicit

Making design explicit

So how do we make designs more explicit? Any of you who have been involved in teaching, training or materials development will be familiar with some form of textual representation of the design process. This might be in the form of a lesson plan, a course syllabus, a workshop or training session outline or the specification for the development of some learning materials. But reflect for a moment on your own experience – to what extent do these representations really reflect the complete design intentions of the teacher? What's missing? Furthermore, in many cases these artefacts or documents are produced *after* the majority of the design decisions have been made. They don't help guide a teacher in terms of making decisions when they are in the middle of the design process.

Think back to the questions you discussed in the forum about how teachers design, how they get ideas and where they get support and guidance. In all probability what you will have discovered is that the design process is messy, iterative and creative. Teachers are constantly juggling a range of design questions, constraints and issues – what are the learning outcomes I want the students to have achieved on completing this, what resources and tools do I want to include, what activities am I going to get the students to do, what assessment activities will I include, what kind of students will be doing this, what environment will this take place in?

Visualising designs

In this section you are going to have the chance to use a visualising tool for representing learning designs. This will begin to enable you to explore some of the issues raised in the previous section and give you the opportunity to reflect on what benefits there are to visualising designs but also some of the issues in terms of transferring inherently implicit design processes into an explicit format. The visualisation tool you are going to use is called *CompendiumLD*. It is a tool for helping teachers/designers create and visually represent their learning designs. It is an adaptation of the Compendium tool (<http://compendium.open.ac.uk/institute/>), which is a form of mind mapping or argumentation software that provides a default set of icons for creating maps to describe argumentation, and for communicating issues within discussions amongst interested parties. The inherent philosophy underpinning Compendium is to provide a visual representation to support the development of thinking and shared argumentation.

Activity 3: An overview of CompendiumLD

1. This short powerpoint presentation with audio will give you an overview of CompendiumLD, a tool for visualising designs.

[end of activity]

Activity 4: Reading

1. Reading. Read the article by Conole, Brasher, et al. (2008) on the development of CompendiumLD.

[end of activity]

Activity 5: Watch

1. Watch the slidecast produced by Paul Clark and Simon Cross on how they used CompendiumLD to map out a learning activity.

[end of activity]

Activity 6: Visualising design

1. Some of you may have used a design tool before, but we guess that most of you won't have done. In this activity you will get some experience of hands-on Learning Design, using CompendiumLD. I would like you to map up the activities you are currently working through in this part of the conference. This document provides a textual, linear representation of the range of activities you are being asked to do – reading, viewing, listening, etc. and a set of resources and tools you are being directed towards. How would this look if it was represented visually? Each of you will have chosen to do different sub-sets of the activities or may have chosen to work through them in a different order. How do these compare? What does the visualization offer compared to the text? Next you are going to use the CompendiumLD visualization tool to map this activity.
2. CompendiumLD can be used to map out and make connections between ideas. If you have ever used a mindmapping tool, CompendiumLD is similar in many respects. Go to the CompendiumLD web site (www.compendiumld.open.ac.uk), which will provide details of how to download CompendiumLD and get starting in using the tool. Once it is downloaded click on the CompendiumLD icon and explore the software, you will find there is further help within the software itself, include links to various short video slidecasts.

3. Once you are comfortable in general with the software, you can start on the main focus of the activity that is to map a simple learning activity. Now start to map out this activity in CompendiumLD. Reflect on your experience as a conference delegate working through this activity as you map out the design. What isn't represented, how much does the design match to your own experience of working through the activity, is there a difference between representation of an activity as a design and as something someone actually works through?
4. Keep a note of what you like and dislike about using this tool and think about how you might use this (individually or within a team) in your own context of practice.
5. Save your design as a jpg and upload into the discussion forum.
6. In the forum, discuss what you liked and disliked about CompendiumLD – what do you think are its main strengths and weakness.
7. Can you see yourself using this in the future? If so how?
8. Look at some of the design other students have posted based on the same activity and note commonalities and differences
9. Discuss the different designs that have been posted and their commonalities and differences, also discuss to what extent this visual representation actually represents the original design intentions, what's missing? Can you think of other ways in which the design could be represented and shared?

[end of activity]

3. Resources and case studies

An increasing amount of information and resource material that can be used for educational purposes is now available online. In the further and higher education sectors much effort has been put into creating collections of resources and repositories to enable teachers to locate and share documents, data, case studies and other materials. But, when it comes to planning and designing learning activities, how easy is it to find appropriate resources for the particular context required? The following activity should give you experience of searching a range of different sources.

Activity 7: An overview of Cloudworks

1. This short powerpoint presentation with audio will give you an overview of the Cloudworks site we have created for sharing learning and teaching ideas and designs.

[end of activity]

Activity 8: Reading

1. Read the article by Conole, Culver, et al. (accepted) on the development of the Cloudworks site.

[end of activity]

Activity 9: Finding and sharing learning and teaching ideas and designs

1. You are going to begin by exploring different repositories of resources to find information that might be of relevance to a particular teaching scenario. Start by choosing one of the following scenarios (or outline your own) as the teaching and learning context for your explorations:
 - a. Refresher course for returner nurses, providing skills update and outline of latest changes in legislation, etc. Use an e-portfolio as the main vehicle of students demonstrating evidence
 - b. Beginners social work course, large cohort of students, want to encourage lots of communication and ways of students practicing their interpersonal skills
 - c. Final year research project in which students need to demonstrate an evidence-based approach
 - d. Large cohort introductory statistics course for students in a range of different disciplines
2. Cloudworks (Cloudworks.ac.uk) is a social networking site for sharing learning and teaching ideas and design. Use the Cloudworks site to help you find useful resources and ideas for your design and suggestions for how you might incorporate different technologies. In terms of specific sites on technologies and how they might be used in an education context you might want to look in particular at the Educause 7 things you should know about series www.educause.edu/7ThingsYouShouldKnowAboutSeries.
3. Write down things you like and don't like about the particular resource collection(s) explored. Note the strategies you are using to search in order to locate resources, etc. that are appropriate for your chosen scenario.
4. In the forum discuss how you got on with the activity. How did the strategies that you used compare with those used by other members of your group? Try to develop a collective response to these questions:

- How useful were the different sites?
- How useful was the information they provided?
- What was missing?

[end of activity]

4. Different schemas for thinking about design

From Activity 2 where you looked at different strategies for design, you will have picked up that design is a complex, messy and creative process. There is a range of different, but inter-connected things practitioners need to take account of in the design process. Sometimes they will be interested in looking at the learning outcomes, at other times they will want to think about what particular tools or resources they want the students to use, or the nature of the task they want them to undertake.

Practitioners might give some thought to the kind of pedagogy the activities embody – encouraging reflection, giving students an opportunity to apply theory to practice, providing exercises which encourage discussion or collaboration. Design also varies within different stages of the design lifecycle – from formulating an initial idea for a course through to implementing and evaluating it.

This section will enable you to sample a number of schemas to help you think about different aspects of the design process and, in particular, to help you make sense of mapping tools, pedagogies and the tasks that students are expected to carry out.

We will look at three different schema. Mapping across pedagogy, tools and activities is a key aspect of any design process. What is the relationship between these things and can understanding/articulation of this relationship help practitioners to design better learning activities?

The first two both provide ways of thinking about how tools map to particular aspects of pedagogy. In the first example you will use a 2-D matrix table to map tools to pedagogy. In the second example you will also map tools to pedagogy, but in this case the schema is a 3D-framework. Alan Mason has been outlining the Hybrid Learning Model, which takes a different approach - starting from the student perspective, thinking about what students will be learning and then how activities can be designed to meet these needs.

Activity 10: An overview of schema for design

1. This short powerpoint presentation with audio will give you an overview of the work we are doing at the Open University trying to develop new schema for design.

[end of activity]

Activity 11: Reading

1. Read the Ariadne article by Conole (2008) on pedagogy schema.

[end of activity]

Activity 12: Reading

1. Read the forthcoming article by Conole in Lee and McLoughlan on the implications for education of new web 2.0 technologies.

[end of activity]

Activity 13: Mapping digital media to four facets of learning

One of the main criticism leveled at the use of many tools in an educational context is that it is technology-driven; i.e. that the focus is often on the tool and what it can do rather than thinking about the pedagogy, what the student is supposed to achieve as a result of undertaking the activity and only then mapping to particular tools.

This first activity aims to address this through the use of a 2D-matrix that helps the designer think about how the use of tools maps to different aspects of learning. The matrix maps tools to four simple aspects of learning (See Figure 1 and then Table 1 for a mapping of these to tools); i.e. that any learning activity is likely to include one or more of these – namely learning by thinking & reflection, through experience and activity, by conversation and interaction, and finally synthesizing of learning through evidence and demonstration (such as through some form of formative or summative assessment). These are of course crude simplifications of what actually happens in the learning process, but nonetheless provide a simple, but effective schema for thinking about how tools can be used. Therefore the schema enables the designer to think about how particular tools are being used to promote these four aspects of learning.

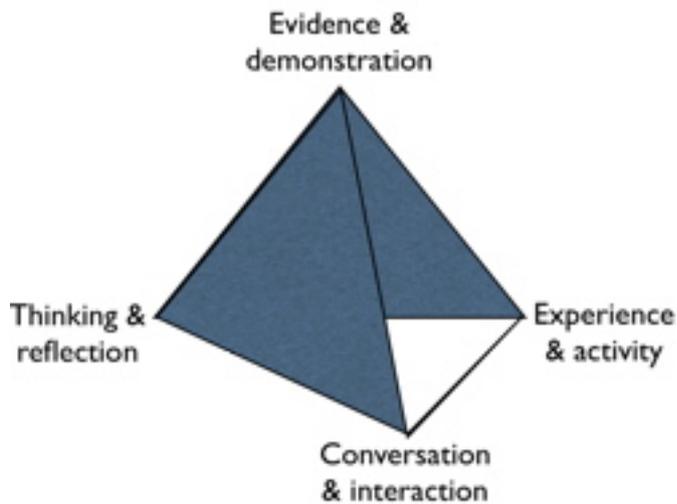


Figure 1

1. Think about some specific teaching activities with which you are familiar (for a course on which you teach or support learners) and about the types of learning they are intended to promote or support. Consider the digital media or tools that are currently used and complete the table below by describing the nature of the student activity and indicating the extent to which it promotes each of the four types of meta-learning. Some examples of tools have been included in the table for you as suggestions, but you can ignore any with which you are not familiar and add any others if you need to.
2. Then list some new tools or ways of using tools and consider the ways they map to the learning. You can either change the tool or the way in which it is used, or both

Tools and a description of their use in a particular context.	Types of learning			
	Thinking and reflection	Conversation and interaction	Experience and activity	Evidence and demonstration
<i>For example; an individual blog being used as a reflective diary or a group-based blog being used to collect a set of class resources to support a particular course.</i>				
Discussion forums used as...				
CD ROMs used as...				
Video clips used as...				
Podcasts used as...				

Wikis used as...				
Blogs used as...				
...				
...				

[end of activity]

Activity 14: Mapping tools and activities to pedagogy

In the first activity you used four broad ‘types of learning as a meaning of looking at tools and how they can be used. In this activity you will do something similar but using a slightly different schema. Conole *et al.* (2004) have developed a pedagogical framework that abstracts out three main dimensions of learning (see Figure 2). The 3 dimensions are:

- **Individual – social:** i.e. any learning activity can be located somewhere along a spectrum from being an individual, isolated experience to being essentially social in nature
- **Active – passive:** i.e. some learning activities involve active engagement, whereas other aspects of learning may occur through some degree of passive immersion
- **Information – experience:** learning activities vary in the degree to which they are information or experience based.

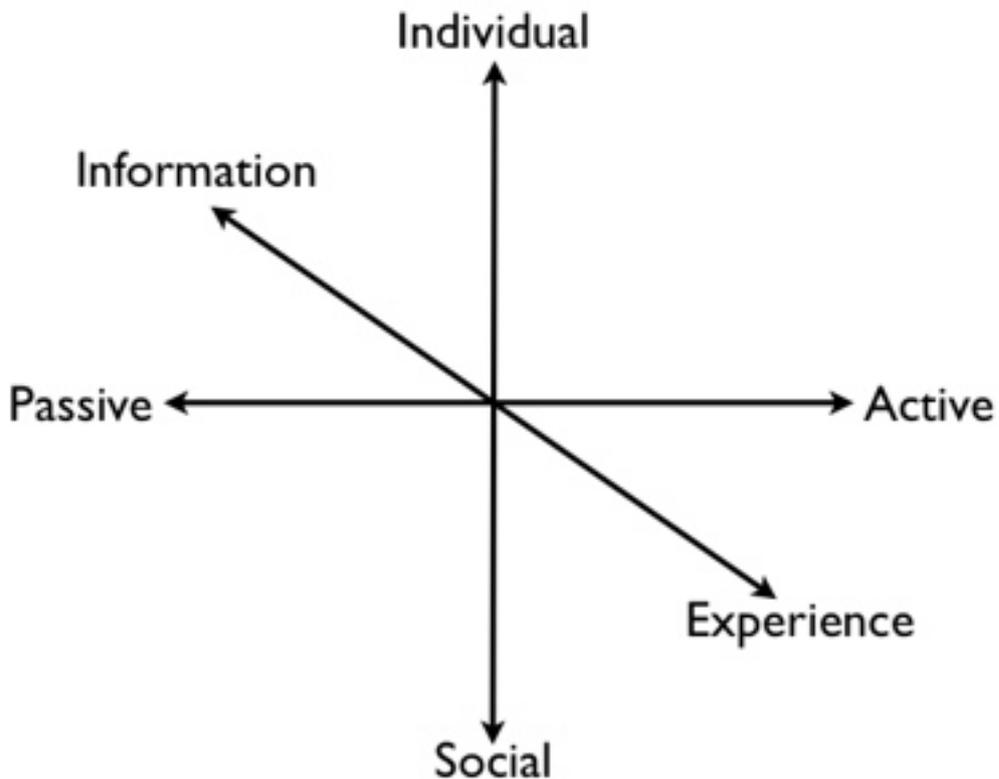


Figure 2

In a similar way that in the first activity you mapped tool use against four type of learning activity, this framework can be used as a basis for mapping out the use of different tools. The dimensional basis of the framework means that you can consider the three dimensions as spectral and hence look at tool use along each of these spectral – i.e. not as a binary decision – so use of a tool to support an activity does not have to be labelled as simple an individual or a social activity it can lie somewhere along the spectrum of individual-social.

Tools can often be used for a variety of different educational purposes. For example, a podcast can take the form of a formal, one-to-many ‘lecture’, it can provide informal study advice for a specific, targeted group of learners, or it could be generated by one or more students to demonstrate their response to an extended activity. In designing learning activities it is often helpful to think about the specific ways in which tools might be used, rather than the range of general possibilities.

1. Try to indicate the location of the following ‘tools in use ‘on the three dimensions (or continua) of the framework in Figure 2
 - A blog as a reflective diary

- A blog as a collective resource for collating references within a student group
- A web search: i.e. students search the web and collate resources against a given set of criteria
- A drill and practice exercise: i.e. students work through a set of resource and then complete a formative self-assessment
- A structured online debate: i.e. students choose a side for or against an issue, post their views and read other postings
- Use of an e-portfolio: i.e. students gather evidence against learning outcomes in a portfolio

[end of activity]

Activity 15: Comparison of different schemas for design

1. In your discussion forum share your views on each of these schema and also the Hybrid Learning Model that Alan Mason has been talking about, how did they compare, can you imagine using any of them, do you think they help in terms of getting teachers to adopt a less technology-centred approach to design?

[end of activity]

5. Forms of representation for design

From the work so far in this section, you should by now have a good idea of some of the ways in which designs can be represented and some of their limitations. In this section we are going to formalize this.

Activity 16: Reading

- Read the chapter by Conole (2008) that discusses the concept of forms of representation in design. The paper provides a classification for different types of representation and discusses why a clearer articulation of different forms of representation is useful. Concentrate on the first half of the chapter (pages 187 – 197).
- As you read the article reflect on your thoughts about this, in particular in terms of the activities you have been doing so far.
- Use the forum to discuss how useful you think the forms of representation described in the chapter are and how they might be used. Consider for example:

- what is your experience of using other people's designs and activities, or sharing yours with other people?
- how useful do you think the different forms of representation would be to people in your own working context? (Your answer might be different for different people, for example lecturers or teachers, a developer translating ideas into a technical solution, an organisation or a professional body accrediting the learning designer's work.)
- which forms of representation would you yourself find useful, in terms of taking and adapting other people's designs?
- what are the pros and cons of textual and visual representation?

[end of activity]

Readings and resources

1. An overview of CompendiumLD

- Conole, G., Brasher, A., Cross, S., Weller, M., Clark, P. and White, J. (2008), Visualising learning design to foster and support good practice and creativity, Educational Media International, Volume 54, Issue 3, 177-194.

2. An overview of Cloudworks

- Conole, G., Culver, J., Well, M., Williams, P., Cross, S., Clark, P. and Brasher, A. (accepted), Cloudworks: social networking for learning design, ASCILITE conference, Melbourne, December 2008

3. An overview of Schema for learning design

- Conole, G. (2008), New schema for mapping pedagogies and technologies, Aridne magazine, <http://www.ariadne.ac.uk/issue56/conole/>
- Conole, G. (forthcoming), Stepping over the edge: the implications of new technologies for education in M. Lee and C. McLoughlin (forthcoming), Web 2.0-based e-learning: applying social informatics for tertiary teaching, Hersey, PA: ICI Global.

4. Forms of representation

- Conole, G. (2008) 'Capturing practice: the role of mediating artefacts in learning design', in Handbook of Research on Learning Design and Learning Objects: Issues, Applications and Technologies, in L. Lockyer, S. Bennett, S. Agostinho, and B Harper (Eds), 187-207, Hersey PA: IGI Global.

5. The OU Learning Design Initiative

- Web site: <http://www.ouldi.open.ac.uk>
- CompendiumLD: <http://www.compendiumld.open.ac.uk>
- Cloudworks: <http://cloudworks.ac.uk>
- An overview of creating a learning activity in CompendiumLD: <http://www.slideshare.net/PerryW/using-compendiumld-to-design-a-learning-activity-435001/>

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