

L₂O || Sharing Language Learning Objects

Project Case Study

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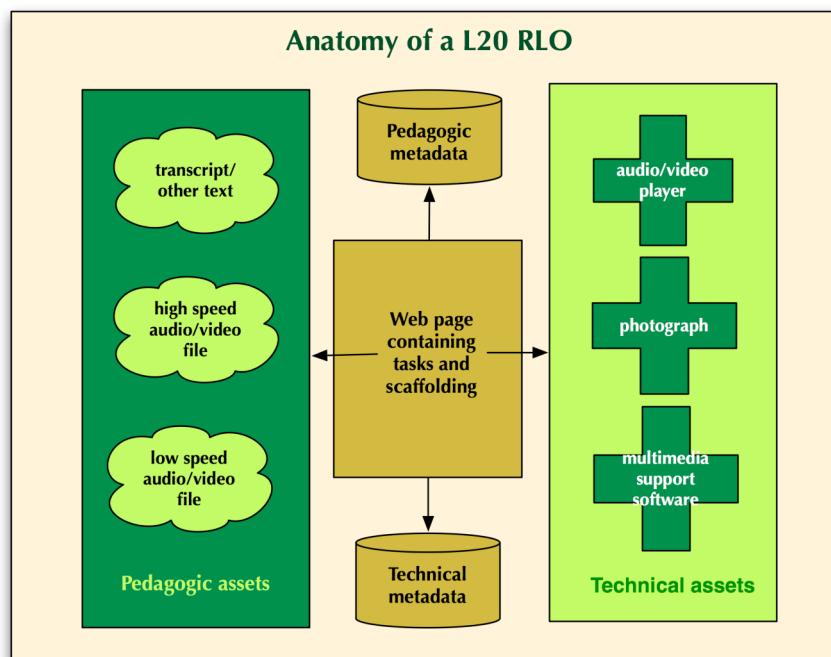
L2O (Sharing Language Learning Objects)

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Background to the L2O Project

The L2O Project centres around two key needs in the field of distributed e-learning. The first of these is to share and disseminate good practice in the development of e-learning pedagogies and processes, and the second is to share and re-use electronic learning resources across institutions and across sectors. Based in work already done by the eLanguages Project (UK eUniversities), the lead development team at the University of Southampton has gone some way towards realising a model for the development of online learning materials focussing on languages or academic study skills that can be re-used or repurposed with comparative ease. The L2O Project seeks to build on this experience and develop, together with project partners, RLOs (re-usable learning objects) from existing online learning materials. These RLOs aim to encompass generic ‘learning to learn’ skills (lifelong learning); language skills common to all language learning; and language specific tasks. The scope of the project will require an approach, which tests both models of collaboration and re-usability. The creation of a shared

Figure 1: Elements that are content packaged to create an L2O LO.



repository will then allow retrieval of the RLOs for a variety of applications within teaching and learning.

The L2O learning object

The Learning Objects (LOs) in the L2O project were developed individually as self-contained ‘chunks’ of online learning material focused on a single learning point, or were extracted and separated from aggregations of online learning material to form single coherent items for learning. Generic templates have been developed that ensure LO manageability that will accommodate variations in granularity. LOs are assembled in a content package with their associated pedagogic and technical assets, with metadata in both xml and Word documents. Once they are

placed in a repository, LOs are available as complete LOs or in the form of disaggregated pedagogic assets, facilitating greater scope for re-use.

The L20 Project's Learning Objects contain extensions to UK LOM CORE Metadata standards that directly address the needs of the Modern Languages Community of Practice. These metadata extensions include points of pedagogic information to guide a user, such as level of task or suggestions for further use. Re-use is greatly enabled through this additional metadata, which describes the pedagogic nature of the Learning Object as a stand-alone unit of learning. The aims or models of the L20 LOs are to achieve pedagogic, contextual and operational ownership. (L20 project website: <http://www.elanguages.ac.uk/sharing>)

Pedagogic models

The generic templates developed to accommodate the LOs contain a statement of what the learning outcome is and/or a description of the pedagogic asset, as well as the activities (or links to the activities) that the learner undertakes to achieve a particular learning outcome. The activities are scaffolded with various types of feedback, for example the answers or explanation.

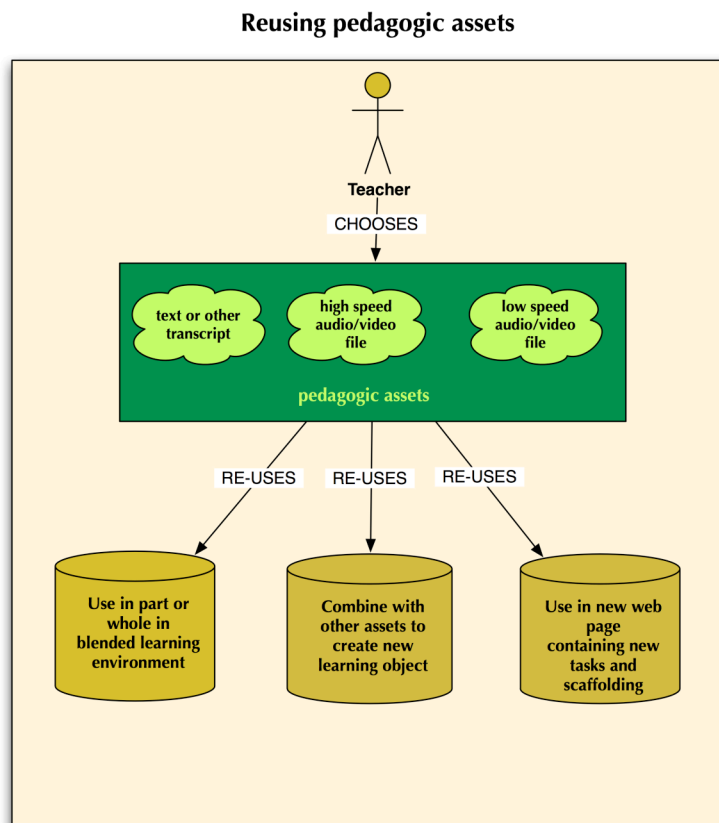
Pedagogic assets belonging to an LO consist of the content material (e.g. piece of audio or text) that forms the basis for the learning activity, whilst the technical assets are those items needed to support the activity that do not have an intrinsic pedagogic value, such as an audio player or simple image. (See figure 2) The use of a generic template, and the fact that elements of the LOs can be disaggregated, means that L20 LOs have the potential to be reusable and are therefore called RLOs. They are packaged for the repository using tools such as RELOAD to ensure the addition of essential metadata relating to the key pedagogic features of the RLOs and their assets.

Figure 2: Elements comprising an original L20 learning object that was remodelled, and content packaged for maximum re-use as an RLO. <http://www.elanguages.ac.uk/sharing/demonstration.htm>

Learning Object	Pedagogic Asset	Technical Asset	Associated scaffolds
1 x writing task	3 x embedded audio files	1 x embedded audio player	Glossary link
2 x interactive task		3 x jpgs	Dictionary link
			Full answers to tasks

There are two main differences between the LO and the pedagogic assets within the content package, which enables the versatility and reusability of the RLO in either its aggregated or disaggregated form.

1. An RLO, and its associated metadata, highlight the scope for their application, *particularly in learning*, but also in teaching. Tasks and scaffolding are included to make a ready-made full package that can be used 'off the peg'.
2. Pedagogic assets, such as video files or reading texts, provide *particular potential for teaching*. These assets may cross reference to other pedagogic assets such as transcripts and other video/audio files, but they always enable the teacher to design tasks for themselves. Pedagogic assets allow:
 - Potential for learning.
 - Designing for future learning.
 - The transferability of LO to other subjects.
 - The ability to create own tasks from media .
 - The re-use of assets.
 - The customisation of assets.

Figure 3: Types of reuse for L20 Learning Objects.

The role of pedagogic metadata and the learning and teaching context

Pedagogic metadata is designed to enable the searcher to find what they want. Real life influences the application of metadata to facilitate the searches, and relates to real teaching scenarios. The pedagogic metadata relates to the different aspects or sub-contexts of the context of use that the searcher has in mind. Contextual metadata can benefit the teacher with culturally specific metadata to locate the necessary culturally specific resources. (Philip and Dalziel, 2003). L20 enables culturally specific metadata to be used when searching for language learning objects.

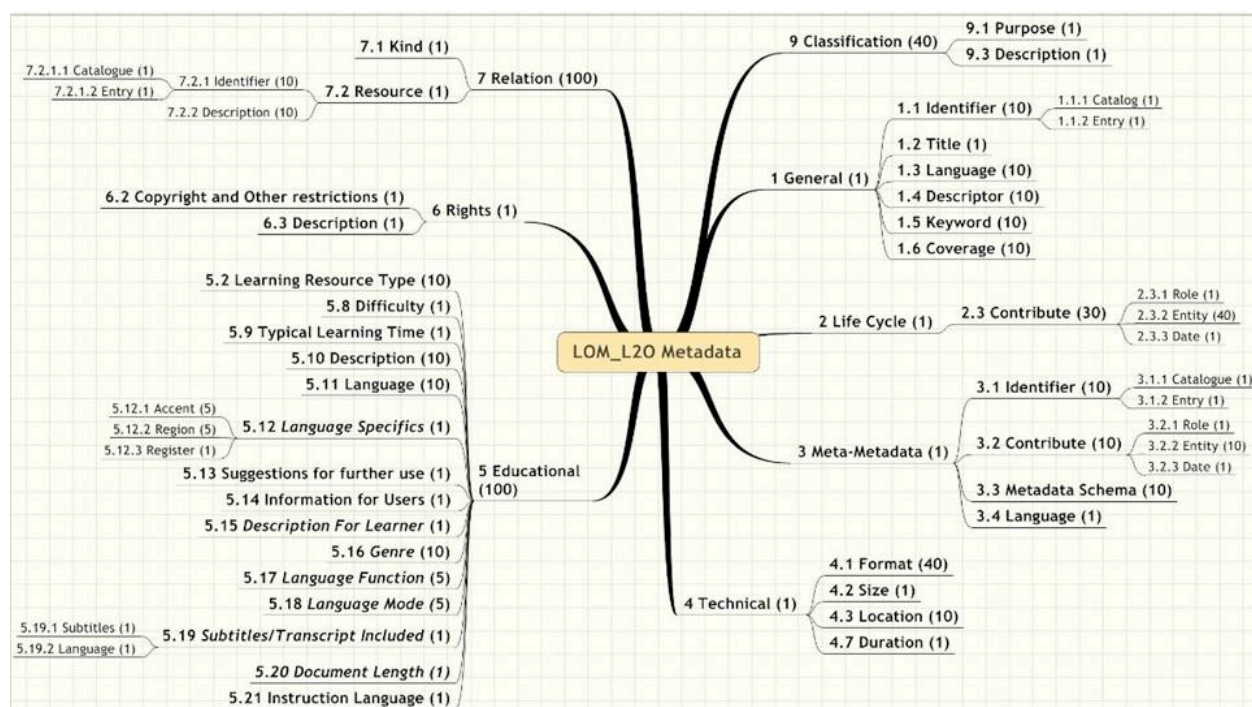
Pedagogic metadata can record and store the creator's 'headspace' for others to reuse, namely the original creator's ideas and intentions for use of the LO/asset. In other words, the learning and teaching context in which it might be used. A learning object may resemble a view of life through an open window, with the viewers interpreting the scene for themselves. What the contextual metadata can do is to offer descriptive detail that elucidates and describes that scene in fuller detail, offering a snapshot or *vignette* of that 'moment'. Vignettes of learning work in a similar way to those in theatre, being 'short, impressionistic scenes that focus on one moment or give one impression about a character, an idea, or a setting.' Like in theatre, these learning vignettes are not

dependent on narrative or sequential structures, but are associated by other types of connection. In theatre, this might be linguistic or symbolic, whilst in e-learning this might be other sub-contexts relating to e-learning such as class size, student age-group, literacy level, educational level.

Recording these vignettes is important, because even teachers working in the same educational contexts may not necessarily view material in the same way. Recording and sharing of these contexts is beneficial because:

- This can save the teacher valuable time in locating suitable LOs as they will not have to work the context out for themselves.
- It will relate directly to their professional practice and development.
- These vignettes are most likely to be lost through lack of documentation. What might seem the most obvious in the present, might be the most valuable and yet unrecorded in the future.

Figure 4: L2O Metadata fields



Factors influencing design

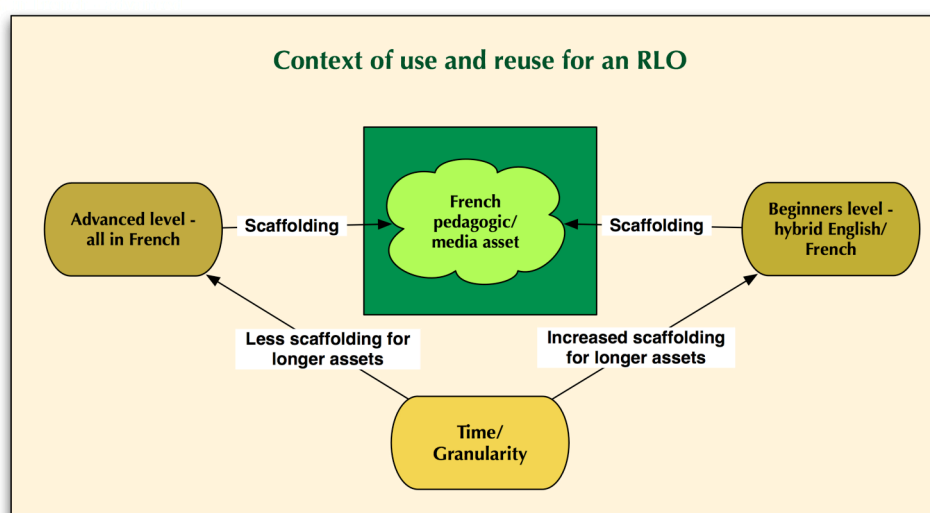
Templates for some of the L2O LOs may be designed to accommodate a single page LO, in order to present an achievable task to the learner. Learners can be put off if they are presented with pages of documents or links to wade through. By accommodating a single page, the whole LO can be seen, this is particularly beneficial to holistic learners. The LO is presented in a linear order as earlier research during the eLanguages Project found that 60% of learners would work through in the order presented. However, 40% would approach the LO differently, and the LO is able to support these styles too. Different approaches for different learning styles are accommodated, e.g. the learner who jumps about the screen in a non-linear fashion, or for example, opens all the answer/feedback sections and then proceeds to work through the LO reading as they go. Other templates take the form of a 'gateway' page, allowing navigation to a range of assets and short tasks, whilst at the same time providing a comprehensive overview of the learning point and scope of the learning object. Both kinds of LO template also allow for different modes of study, such as all stand-alone online or blended, at different times of the day, in different locations and for time durations which are convenient for the learner.

Feedback is concealed in an area, which can be made visible at the discretion of the learner. Alternatively feedback is provided through existing software, such as a Hot Potatoes exercise, that has been incorporated into

the learning object. This ensures that vital parts of the LO are not missed through exposure to large amounts of textual information.

In all templates used during the project for LO development, key points of user information such as the main learning outcome(s) and a brief description of the central resource are presented foremost in the learning object. This may be the 'index', 'gateway' page or the 'frame' of an integrated package. This enables them to be easily

Figure 5: The granularity of a pedagogic asset is important as this affects the level of scaffolding and types of reuse.



seen and located.

The teacher

An L20 LO is intended for use by tutors and/or students. There are two implicit contexts included in the RLO design;

- Each LO content design is based on offering the most scope for reusability, whilst addressing key implicit context issues such as the level of the learner(s).
- LOs are designed with so that the teacher can choose whether or not to use the whole LO. Selection is common practice in teaching; with teachers selecting part of a book or a clip from a film, one poem rather than the whole oeuvre.

L20 LOs must also be transferable to institutions not currently collaborating with the project, which may or may not be located within the country. LOs in this context have to accommodate potentially unrelated teaching contexts.

The role of the micro context

When using learning objects, we don't want to take into account any factors external to the learning object. We want objects to be within a closed system, encapsulating all the necessary content and logic in itself – totally ignorant of the outside 'world' in which the object functions. (Koper, 2003)

A L20 LO is centred on a learning point, or the exploitation of a particular resource for language learning purposes. The inclusion of a micro context of some kind in the LO enables the LO to be used as stand-alone, though it is also reusable with many layers and levels. Dependencies for the learning though they exist in the real world, are assumed in terms of a basic knowledge, level of understanding and skills. These dependences are assumed as prior to RLO stand-alone usage; though in face-to-face or blended learning, the teacher would deal with engage with this directly if required.

Granularity

The granularity of a pedagogic asset is of major importance as this affects the level of scaffolding and types of reuse. L20 LOs allow for different granularity of LOs from partners. For instance, the L20 LO can vary in granularity from a pedagogic video asset covering a 50-minute lecture to a short 5-minute drag and drop activity.

The project team designed several generic templates to allow for differences in style of LO, which can support a one-hour lecture and a three-minute podcast. The templates from partner institutions may also accommodate a single task or multiple tasks. Scaffolding and feedback are included in the metadata in relation to individual learning/teacher moderated learning. L20 RLO is able to accommodate independent learners as an LO includes all the scaffolding needed for self-study.

Technical development

The philosophy behind L20 metadata is that the key elements of the LO should appear in both the learning objects themselves as well as the metadata.

Collaboration – successes and problems

Common problems that occurred during the L20 project were:

- Technical difficulties with LOs submitted.
- The scaffolding and lead in/introduction were not included in submitted materials.
- Sometimes there was not enough explanation provided for the LO.
- No metadata submitted with the LO.
- Mixed results for ideas for further use submitted in the metadata.

An aim of the L20 project was to have a range of RLOs suitable for different levels of language learning (i.e. not simply to have LOs designed for use in Higher Education institutions). With this in mind, a partner within the secondary school sector, (Ashcombe School), submitted a large number of language learning LOs to the repository, which they had created for use by their students.

The LOs were in the subject areas of German, Italian, French and Spanish. Each LO consisted of a short video extract alongside notes on pronunciation, a transcript with translation and a Hot Potatoes activity. The way in which the LOs were constructed, presented a technical problem from the point of view of accessibility, because they made use of 'frames' in their design. The use of 'frames' allows a number of html pages to be displayed conveniently on one screen, however, screen readers, (used by the visually impaired), cannot easily interpret the information within the frames, and so data can be lost or presented in a confusing way, and this renders the LO inaccessible for some learners. Any LO designed for open public use is required to be accessible to the widest number of people possible and this is also an essential criterion for LO reusability and sharing.

In order to rectify the 'frames' issue, a new template was applied to all of the LOs that made use of 'i-Frames.' The new template ensured that if a frame does not display its information properly within one screen, a link would take the user to the information in a new screen. Screen readers can interpret data presented in this way.

Project partners did sometimes not add supportive information, and this manifested itself in a number of areas. There was a lack of LO lead in/scaffolding in some instances, which might have seemed unnecessary to partners, as teachers are felt to have an intrinsic understanding of their domain. In addition, teachers using the material in a blended situation would provide their own lead-in and scaffolding, so would not necessarily see the need to include the lead in/introduction. However, the inclusion of the lead in and scaffolding makes resource discovery faster, and more satisfactory, for teachers searching for appropriate materials. Additionally the lead in and scaffolding allow a LO to be used as stand-alone activity.

Another aspect related to the potential for reusability and sharing of the Ashcombe School LOs was that none of the LOs included metadata, and so this had to be added to each LO before it could be uploaded into the repository. The addition of metadata is a more time-consuming process if not done by the creator of the LO, but it is essential if the LO is to be reusable.

The project partners were requested to include 'ideas for further use' as part of their metadata creation, which had a mixed response, even though these ideas are seen as very desirable. Examples can be seen by looking at the asset metadata in CLARe; e.g. <http://clare.eprints.org/11/>

Conclusion

- L20 LOs are based on real world teaching, and the domain and teaching/reuse within that context.
- Scaffolding, tasks and templates mean that the LO can be reused by learners and teachers in other contexts. The inclusion of micro context means can the LO be used as stand-alone.
- The idea of a pedagogical asset, a media asset such as a sound or video file, is that can be reused with other scaffolding, tasks and templates in other contexts. The teacher is able to increase or decrease the level of scaffolding to accommodate different levels.
- Metadata are designed to facilitate the sharing and location of LOs and assets within a repository.
- Metadata are designed to provide meaningful information that is tailored to the needs of the language teaching community.
- Not all the contextual data is defined in the metadata, some aspects are assumed in advance, and some are left to the teacher/learner to decide. It is not the role of contextual metadata to model the whole contextual world.

Table 1 L20 Description of Learning Object

Title of Learning Object	Getting the most out of dictionaries	Please choose by field. In this field, a description of the resource.
Educational Context/Level (e.g. GCSE/A level, Languages Ladder, IELTS...)	45 min	This should indicate the national framework and level for material.
Description	This resource allows users to evaluate the benefits of different types of dictionary for language learning purposes and listen to 3 language learners talking about the dictionaries they use with associated exercises	This should be a concise intensive description of the resource. There is a word limit of 50 words for this field.
Keywords	Dictionary/use/ language/ learning/	This should be a maximum of 10 keywords that accurately describe the resource
Topic	Using monolingual, bilingual and specialist monolingual dictionaries to support language learning	This should indicate the general coverage of the Learning Object (LO)
Author/Contributor	J.Watson	This is the name of any authors/contributors and academic institutions
Pedagogic type	Activity-based	Choose from: presentation-based/activity-based/case study-based/enquiry-based problem-based/collaboration-based, communication-based
Time needed to complete task (approx)	45 mins	This is the approx learning time, format: HH:MM:SS
Main task purpose	To explore the use of different types of dictionary as language learning support tools	This should outline the main purpose of the tasks involved within the LO
Description for learner (e.g. main & subsidiary learning outcome(s), skill(s) being practised)	In these activities you are going to explore the benefits of using different kinds of dictionary. You will also consider how useful your own dictionary is and listen to some language learners talking about the dictionaries they use.	Self explanatory
Language of Task instructions	English	Please indicate the language the task instructions are presented in.
Subject or skill area(s)	Language learning skills	Self explanatory
Copyright Holder	Elanguages, University of Southampton	Please consult your institutional IPR policy if you are unclear about this field.
Technical assets (e.g. Flash, image etc)	Flash, images (3)	
Pedagogical assets (e.g. video, transcript etc)	3 short audio clips	Include any details here, e.g. URL of resource etc
What associated scaffolding is there? (e.g. answers/ feedback / help/weblinks)	Comments/ answers/glossary/ weblinks	Include any details here, e.g. URL of resource etc.

Explanation of L20 fields

Native language refers to the language being learned NOT the native language of the tutor/audience. (think TEFL)

Levels is applicable to re-use and context of re-use. The scaffolding provided by the L20 learning object supports this.

Task purpose is to aid tutor searching, and is based on ideas of lesson plans and learning objectives

Register - Denotes whether the language used is formal or informal.

Presentational form – Presentational form of the LO, for instance songs, plays, poems

Language functions – An important aspect of language learning, language function denote the aim of the words and phrases being learning. For instance,

- Shopping
- Buying tickets
- Directions
- Business negotiations

Discourse/voice – *Description of purpose needed* Three types of voices that might occur in an L20 LO are:

- List
- Monologue
- Article from paper

Subtitle/translation – These can also function offer accessibility to the RLOs.

Length of time The contexts of re-use are different, therefore length of time field is important.

Suggestions relates to areas such as re-use, experience of using the RLO and professional development

31	5			Educational		
32	5	2		Learning Resource Type	(Learning?) Resource Type	Type (E.g. video, audio, text)
33	5	8		Difficulty	level (no ladder)	
34	5	9		Typical Learning Time		Time Required (Approx)
35	5	10		Description	Resource Body	Main Purpose/Learning Outcome
36	5	11		Language		Language
37	5	12		Further Language		
38	5	12	1	Accent		Accent
39	5	12	2	Region		Region
40	5	12	3	Register		Register
41	5	13		Suggestions	Description for Teacher	Suggestions for further use
42	5	14		User Info	Information for users	Subject(s) or Skill(s) area(s)
43	5	15		Description for Learner	Description for Learner	
44	5	16		Genre	Presentational Form	Genre (song, film, interview etc)
45	5	17		Language function		Language function(s) (e.g. purchasing goods)
46	5	18		Language mode		Language mode (interaction, presentation)
47	5	19		Subtitles		
48	5	19	1	Included		
49	5	19	2	Language of subtitles		Language of subtitles
50	5	20		Document length	Word Count or Page Count	
51	5	21		Instructions Language	Language of task instructions	

Technical - technical requirements/plugin needed. What is needed to enable interoperability, both for student and teacher. This relates to the delivery context, or the classroom context in lit review)

Glossary

Explanations of L20 project terminology and a glossary of acronyms and technical terms can be found here.

<http://www.elanguages.ac.uk/sharing/terminology.htm>

Bibliography

KOPER, R. (2003) Combining Reusable Learning Resources and Services with Pedagogically Purposeful Units of Learning. IN Littlejohn, A. (Ed.) *Reusing Online Resources: A Sustainable Approach to E-Learning*. 1st ed. London and Sterling, VA, Kogan Page <http://www-jime.open.ac.uk/2003/1/>.