Ferl—an information service supporting the use of IT for teaching and learning

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Overview

About the Project

Project/Service Name:
Ferl

Project/Sevice URL:
http://ferl.becta.org.uk/

Project Run By:
Becta

Main concern of project/service:
To support individuals and organisations making use of Information Learning Technology in Further Education.

Staff Expertise
Learning Technology, Education, Technical

Cataloguing by
Third party cataloguers

Record Management

Number of resource descriptions
Ca 4,500

Granularity/typical resource size
Generally small documents

Record Management
How are records stored?? i.e. what type of database and format (file, XML) are they stored in.

Tools Used
Inbuilt database and content management system

Specifications/Standards

Relevant specifications/standards
IMS Metadata (reference 2), Dublin Core, Becta

Way of using standards
Elements relevant to project were selected from standards?

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1) Summary

Ferl (reference 1) is a large database which contains descriptions of a lot of different types of resource. The schema chosen has many elements in common with the IEEE LOM and uses some of them to control the end-user display. The Schema has been designed to have elements in common with other projects to help facilitate interoperability. In particular, records may be shared with the Virtual Teaching Centre (reference 8)

2) Background

Ferl is an information service that aims to support teachers and managers in Further Education who are using IT for teaching and learning purposes. It is funded by The Learning and Skills Council and managed by Becta (reference 7).

Five people work on the project at Becta in Coventry including a content editor, a web administrator, 2 information officers and a content officer. There are also four other development officers who work off-site and commission resources.

The number of resources is currently 4,485 but another 100 resources are being added every month. There are many different types of resources included in Ferl as it is intended for a large audience of people involved in information technology for learning and teaching in Further Education. This includes descriptions of websites with links and files which are stored on-site. These resources are classified under the headings: Learning & Teaching, Infrastructure & Technology, Current Issues, People & Practice and Content Creation. The resource formats include word documents, Excel spreadsheets and web pages.

Interoperability was considered to be a very important issue because Becta have close partnerships with organisations like JISC (reference 9) and the National Learning Network (reference 10) so there is potential for sharing resources with other projects. This emphasis on interoperability is also based on their previous experience with projects involving metadata and VLEs. Their choice of elements for the metadata schema, which includes elements from Becta, IMS and Dublin Core, reflects this.

3) Implementation Details

The metadata schema for Ferl was designed by 2 people and was made to be similar in a number of ways to Becta metadata (reference 6). The process of designing the metadata was quite time consuming, as the learning curve is steep. However, it was considered necessary to

get this in perspective and not spend too much time on the metadata schema, as populating the database was an important priority. The basic approach used was to consider the end user and what they required before looking at the IMS and Dublin Core metadata schemas.

Ferl obtains their resources from several sources, including internal development officers, experts in the use of ILT in post 16 education and end users. Development officers, who have a good knowledge of what Ferl needs, commission content. Websites and other resources are also suggested by end users of Ferl. In addition end users receive a fee for submitting some types of resources for the site.

The process of entering metadata records is done internally, through an online system which allows the user to organise how the resource will appear in the database. An address book is also part of the Content Management System so details about authors, publishers etc can be obtained from it.

The project is now at the point where an XML implementation can be made to allow sharing of data with other sites. Ferl intends to share resources with the Virtual Teaching Centre and a couple of projects in JISC and HE. They are also intending to register their metadata schema.

4) Elements in the Ferl Metadata Schema

There are 50 elements in total in the Ferl Metadata Schema. The team tried to match the metadata to other systems designed by Becta wherever possible. In particular the Virtual Teacher Learning Centre (reference 3), as Ferl intends to share resources with them. Close attention was also given to the IEEE LOM (reference 11) and to Dublin Core (reference 5) during the design phase. The basic strategy involved was to start with a large number of elements and remove the least useful ones in the future.

The Schema includes many elements that are identical to the IEEE LOM, including the vocabularies used. These elements are shown below.

Elements which map directly to IEEE LOM

1.1 general.identifier	
1.2 general.title	
1.3 general.language	
1.4 general.description	Generally a couple of sentences long. Often contains information about who the author is.
1.6 general.coverage	This is always UK at the moment
2.1 lifecycle.version	
2.2 lifecycle.status	
2.3.1 lifecycle.contribute.role	
2.3.2 lifecycle.contribute.entity	
2.3.3 lifecycle.contribute.date	
3.3.1 metametadata.contribute.role	
3.3.2 metametadata.contribute.entity	
3.3.3 metametadata.contribute.date	
4.2 technical.size	
5.1 educational.interactivity type	
5.3 educational.interactivity level	
5.5 educational.intended end user role	
5.8 educational.difficulty	
6.1 rights.cost	
6.3 rights.description	In Ferl, this is called Use Restrictions

7.1 relation.kind	
7.2 relation.resource	
7.2.1 relation.identifier	

Elements which have different vocabularies

The following table list the elements which occur in the LOM but have a refined or extended vocabularies.

1.1.1 general.identifier.catalog	Always uses a URL pointer
1.3 general.language	27 choices
2.3.1 lifecycle.role	Uses vocabulary: {Author, Publisher, Initiator, Terminator, Validator, Editor, Graphical Designer, Technical Implementer, Content Provider, Technical Validator, Script Writer, Instructional Designer, Supplier, Interviewer, Interviewee, Event Organiser, Contact}. Changes reflect the large variety of resources that are held in this database
4.1 technical.format	Uses internet media types. Subset of MIME content types listed by IANA includes for example application/zip, html, sgml, word, flash.
4.4 technical.requirements	In Ferl is technical.operating system uses different vocabulary is {any, acorn, macos, ms-windows, pc-dos, unix, other}
5.2 educational.learning resource.type	uses much longer vocabulary from Gateway to Educational Materials (GEM – reference 4) Resource Type. {activity, artifact, best practice, catalog record, collection, community, course, curriculum, curriculum support, data set, educators guide, environment, event, form, image set, lesson plan, literature, primary source, project, realia, reference, research study, secondary source, serial, service, story, study guide, tool, unit of instruction}
5.6 educational.context	uses vocabulary suitable for UK FE: {any, pre entry, level 1, level 2, level 3, level 4, level 5, Scottish pre entry, Scottish level 1, Scottish level 2, Scottish level 3, Scottish level 4, Scottish level 5}

Elements which have no obvious IMS equivalent

The following table lists the elements which do not appear to have an equivalent IMS element. Most of them have been formed internally.

Element	**Details**
general.alternative title	Alternative title for the resource
general.place	Related geographical region. This could be partially mapped to LOM 1.6 coverage as coverage allows place and period in same entry
general.period	Time span covered by resource. This could be partially mapped to LOM 1.6 coverage as coverage allows place and period in same entry

lifecycle.date	Date Associated with resource
lifecycle.created	LOM has similar elements in 2 lifecycle though there is not an exact correspondence
lifecycle.published	This could be mapped to 2.3.3 Lifecycle.Contribute.Date with Lifecycle.Contribute.Role = Publisher
lifecycle.modified	Date last modified
lifecycle.available	Range for when resource is available . This is set by default to 10 years
lifecycle.valid	Range for when resource is valid. This has a default setting of 10 years
technical.type	Uses DCMI type vocabulary: {collection, dataset, event, image, interactive resource, service, software, sound, text}. Note that there are subsets which are included in technical.type.specific
technical.type.specific	Another level based on value for technical.type. Vocabulary is too long to mention here.
technical.system rquirements	information about software and hardware requirements to use this resource.
educational end user type	Vocabulary includes: Governor, Head of Department, ILT coordinator, technician, lecturer, principal, senior manager, staff development officer, project manager, admin staff, learner, learning resources manager.
educational.delivery methods	Comments on how resource is supposed to be used. Could possibly be mapped to educational.description.
rights.price	actual price
rights.price URL	URL where price details can be found
right.copyright URL	
rights.copyright	company name

Vocabularies

The actual taxonomy to help users find the correct resource is not included in the metadata schema. The classification categories are based on Learning & teaching, Infrastructure & technology, Current issues, People and practice and Content creation. The learning and teaching subject use the same vocabulary as University for Industry (i.e. Superclass 3), although this covers some subjects better than others. Ferl defined the vocabularies used for infrastructure & technology and People & practice.

End User Interface

The content management system makes use of the metadata elements. The system can be searched by typing in words and by browsing. Browsing is dependent on the five categories of resources. They are Learning & teaching, Infrastructure & technology, Current issues, People and practice and Content creation. By choosing one of these categories, menus of further sub categories are displayed for the user to select from. These classification systems are used internally and are not included in the metadata schema.

The number of hits the resource has obtained (not in metadata schema) is given in the search results screen along with date the resource was entered, the general description, details about type of resource and the search relevance score. The search results screen can be sorted by file type, date added, number of hits or resource title.

The team felt that some of the metadata would not be that helpful for the end user. Because of this, a lot of the metadata can not be seen directly by the end user but is used behind the scene for organising the resources. Examples of elements used to organise what the user sees include the relations and the lifecycle availability date, which is used to automatically, remove resources that are no longer valid. Elements relating to contributor details are only used with the permission of the contributor.

The Ferl team are particularly pleased with the way that standards are embedded in the system and the how the metadata is used to determine how the content appears.

5) Reflections

General Description

The content of the general description element reflects the fact that a lot of the other elements are hidden from the end user. It is fairly short (about 2 or 3 sentences on average) and contains information that is considered to be very useful to the end user. For example, the authors name and if it was a learning teaching object, then notes would be mentioned about the distinguishing features.

Educational Elements

In general it was felt that the educational elements were difficult to use since they were considered to be subjective. The team are considering removing these elements even though they think that educational details are of value to their end-users.

Element	Comments
Interactivity type	This is very difficult to classify, and it is not consistently used
Interactivity level	This is a bit subjective. A resource may be interactive (for example cutting and pasting text) but may not be in terms of learning or knowledge. In practice interactivity level is not consistently used
Context	This is based on educational levels. Not consistently used.
Difficulty	Also subjective. A resource can be difficult because of lack of familiarity (e.g. people are less familiar with Excel than Word) and because of the difficulty with the learning objective and context.

Technical Elements

The technical fields were considered to be very important for end users in order to know if the resource is worth looking at. This is because Ferl has a very wide range of size and type of files.

Element	Details
technical.size	It is important for the end user to know how big a file is before downloading
technical type format	This allows the user to know what sort of file the resource is and if it can be run on their computer.

Lifecycle and Relations Elements

The lifecycle elements and relations elements were important for controlling the end user display.

Element	Comments
Lifecycle.contribute.entity	This is important so that the user can trace the resource.
Lifecycle.date	This allows the system to remove a resource when it is no longer valid. This could be used for event descriptions or news articles. It can also be used to delay publishing.
Relations	This was more useful than expected. It can be displayed on the site, it is used to link records within the database, and also helps

	with maintenance of the database.

References

1) "Ferl Web Site", http://ferl.Becta.org.uk/, The main site for the Ferl project. Records from the database can be reached from this site

2) "IMS Learning Resource Metadata Specification", http://www.imsglobal.org/metadata/index.cfm#version1.22, This site can be used to download the latest version of the IMS metadata schema.

3) "Virtual Teacher Centre" , http://vtc.ngfl.gov.uk/docserver.php, The VTC is a service for schools professionals providing news, support for professional development and the facility to search quality-badged resources across the National Grid for Learning.

4) "Gateway to Educational Materials (GEM) Resource Type", http://www.geminfo.org/, This site contains information about metadata for educational purposes.

5) "Dublin Core Metadata Schema", http://dublincore.org/, The Dublin core metadata schema can be obtained from this website.

6) "Ferl Metadata Schema", http://ferl.Becta.org.uk/content_files/resources/ferl/ferl_metadata.xls, This site contains details of the metadata schema used by Ferl including the vocabularies.

7) "Becta website", http://www.Becta.org.uk/index.cfm, The British Educational Communications and Technology Agency (Becta) is the governments lead agency for ICT in education. It supports the UK Government and national organisations in the use and development of ICT in education to raise standards, widen access, improve skills and encourage effective management.

8) "Virtual Teacher Centre", http://vtc.ngfl.gov.uk/docserver.php, The VTC is a service for schools professionals providing news, support for professional development and the facility to search quality-badged resources across the National Grid for Learning.

9) "The Joint Information Systems Committee", http://www.jisc.ac.uk/, The Joint Information Systems Committee (JISC) is an independent advisory body that supports further and higher education by providing strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) to support teaching, learning, research and administration.

10) "The National Learning Network", http://www.nln.ac.uk/, The National Learning Network (NLN) is a national partnership programme designed to increase the uptake of Information and Learning Technology (ILT) across post-16 education in England.

11) "IEEE LOM", http://ltsc.ieee.org/wg12/", The IEEE Learning Technology Standards Committee (LTSC) has been providing for the development and maintenance of the Learning Object Metadata (LOM) standard since 1997.

Publication Details

Title: CASE STUDIES IN IMPLEMENTING EDUCATIONAL METADATA STANDARDS: Ferl—an information service supporting the use of IT for teaching and learning
Location: URL: http://metadata.cetis.ac.uk/guides/usage_survey/cs_ferl.pdf
Publisher: CETIS: the Centre for Educational Technology Interoperability Standards, http://www.cetis.ac.uk
Authors: Barker, E & Thomas, A
Date: 04 Apr. 2003

Version History

Version 1: 04 Apr. 2003