Standardization in eLearning Technology for Europe

Introduction

For some years there was a widely held view that the first generation of open eLearning standards, while valuable, had limited eLearning to a relatively simple, single learner, 'deliver-and-test' approach. A significant step forward was marked by the publication in January 2003 of the Learning Design specification from the IMS organisation, which was intended to enable flexible and more sophisticated pedagogical approaches to eLearning.

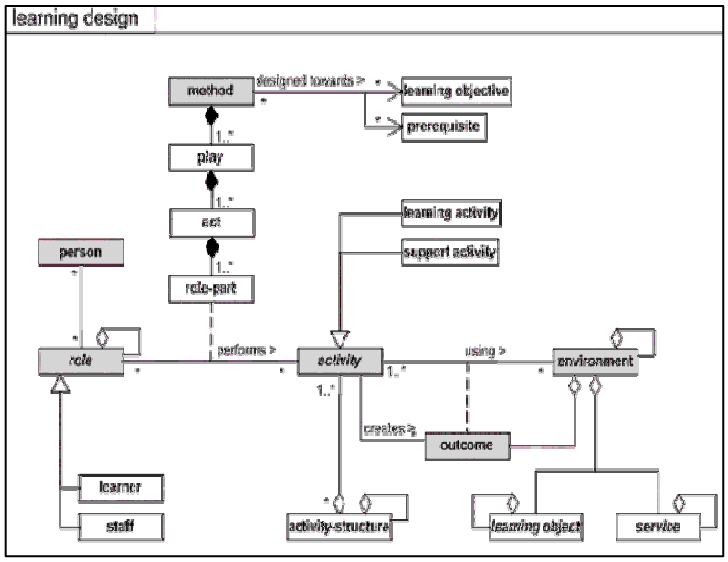
Government agencies, researchers, and commercial organisations can and do promote standards, and the coordination of these interests is often the determining factor in whether a new specification becomes a widely adopted global standard. It's within this context the UNFOLD project was conceived to promote and coordinate the adoption, adaptation, implementation and use of IMS Learning Design and related specifications.

Standardization Challenge

The UNFOLD project has been working in the area of *Technology Enhanced Learning* in the European 6th Framework Programme since early 2004. The standardization challenge faced by the project was to build a community that was deeply involved with the Learning Design specification from IMS, so that it would be widely adopted and also evolve to meet the needs of Europe. Many different groups needed to be included if the Learning Design specification was to be accepted as a standard, but often these groups were not in contact. Researchers developing specifications do not usually work with authors of learning materials, and tool developers do not usually work with teachers and learners. The UNFOLD project determined that if progress was to be made in this key standard for eLearning in Europe, then information needed to flow between these disparate groups of people.

Learning Design Specification

The IMS Learning Design specification is used to describe learning scenarios. It allows these scenarios to be presented to learners online, and enables them to be interoperable so they can be shared between systems. It can describe a wide variety of pedagogical models, or approaches to learning, including group work and collaborative learning. It describes how people perform activities using resources, including materials (e.g. books, articles, software programmes, pictures) and services (e.g. forums, chats, wiki's), and how these are coordinated into a learning flow.



Standardization Path

UNFOLD decided early in the project that the path towards greater adoption and evolution of the Learning Design specification needed to be based on a very collaborative approach that would involve organisations across Europe. The path chosen was to work closely with other projects within the *Technology Enhanced Learning* programme, and to build a broader community of interested organisations that would share experiences in utilising the specification, and become an important constituency in its adoption and evolution. A set of action steps was identified for the project.

Step 1: Establishing communities

To accelerate the adoption and to shape the evolution of the specification, communities of practice were established involving researchers, tool developers,

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learning designers and teachers to use and evaluate the Learning Design specification.

Step 2: Identify and aggregate needs

Each of the communities of practice came together both in workshops and online forums to share their experiences, and address common issues regarding the Learning Design specification and supporting tools. The project facilitated the exchange of information and collected and addressed specific needs.

Step 3: Influence the evolution of the specification

The needs and issues identified within the communities of practice were documented and presented within IMS. Some of these needs have been proposed as extensions to the Learning Design specification, others as complimentary specifications for IMS to develop to support further interoperability of eLearning systems.

Collaboration in Research Clusters

UNFOLD was one of several eLearning projects funded and launched by the European Commission in 2004. Several of the other projects also utilise the Learning Design specification in their research. The ELeGI project addressing eLearning across GRID based architectures, and the iClass project addressing innovative eLearning pedagogies for K-12 students, collaborated with UNFOLD in evaluating the Learning Deign specification. The PROCLEAR Network of Excellence also played an important role in broadening the reach of UNFOLD in building communities of practice and addressing technology areas. The TELCERT project has worked on application profiles and conformance tests for Learning Design based systems, which will be delivered in 2006. Verification of conformance is expected to increase interoperability and accelerate the global adoption of the Learning Design specification and future extensions.

Interim results

The work within UNFOLD has lead to the number of 'Units of Learning' produced with the Learning Design specification going from near zero in 2004, to the hundreds by the end of 2005. This increase in use of the specification is encouraging, and reflects the success of UNFOLD in providing a platform for coordinating development of tools, demonstrating them, and providing leadership in the evolution of the specification. Over the course of the project UNFOLD has organised a large number of events, including:

- 6 Community of Practice meetings and 10 workshops across Europe
- 3 seminars in collaboration with other organisations

During these events people presented their work to each other, were trained to use the newly developed tools, tested the interoperability of tools, and informed each other about new plans and extensions to the Learning Design specification.

Key Learning Points

Insights gained from the experiences of UNFOLD that might help other projects include the following:

- The time required to build a constituency in support of a standard was underestimated. A key element that accelerated the work to establish the communities was the availability about midway through the project of tools that utilised the specification. It was at this milestone when true collaboration became possible as the communities of developers and learners could evaluate first-hand the specification.
- The fact that the first tools that utilised the specification were open source avoided many issues for the project. Fragmentation of the standard through proprietary interpretations has been avoided and the open source approach has encouraged further research and recommendations by organisations in Europe who can readily access current state-of-the-art.
- Constituency building was successful because people outside of the project were willing to invest their own resources to participate. The Learning Design specification addressed a real and identifiable need for those involved in eLearning. This motivated involvement, which increased the resources for evaluating and deploying the Learning Design specification by orders of magnitude beyond those within UNFOLD.
- Having partners in UNFOLD that were involved in the development of the Learning Design specification was a key factor in the project success. The UNFOLD project provided a European forum where other European projects and researchers could discuss and address issues and clarifications concerning the Learning Design specification. This deep involvement of UNFOLD partners in IMS gave confidence to European organisations that their interests were being represented in the IMS standards process.