Research Project Focus:
L4All

The LifeLong Learning in London for All - L4All - project has investigated the concept of 'trails' as a way of organising lifelong learning opportunities. The L4All pilot system combines a set of web services to provide the functionality needed to support this central idea.

Overview of L4All

The LifeLong Learning in London for All (L4All) project\(^1\) is funded under the UK’s JISC Distributed e-Learning Programme\(^2\) and has focussed on supporting the independent lifelong learner, particularly those 16+ learners who traditionally have not participated in higher education.

A pilot system has been developed, which records and shares learning pathways through educational offerings with the aim of facilitating progression of lifelong learners from Secondary Education through to Further Education and on to Higher Education (HE).

The L4All system allows learners to access information and resources registered with the system by their providers, to plan their own learning pathways, and to maintain and reflect on their learning throughout life. Tutors are able to register recommended pathways through courses and modules (which might be developed by a number of providers), thereby encouraging progression into HE. The system allows learners to share their learning plans and pathways with other learners (if they wish) in order to encourage collaborative learning and collaborative formulation of future learning goals and aspirations.

The "trails" approach is based upon the work of Vannevar Bush (Bush, 1945). More recently this concept has been further developed within the Trails project within Kaleidoscope (Keenoy et al., 2004 \[4,5\]; Peterson & Levene, 2003). The concept has been developed further in L4All to provide the basis for modelling user behaviour and informing system designs.

L4All allows tutors and learners to create learning pathways through the learning resources registered with the portal by their providers. As an aid to constructing their own learning pathways learners are able to search for pathways provided by tutors and other learners, giving them a repertoire of learning possibilities that they may not have otherwise considered.

Service Composition in L4All

The L4All pilot has successfully integrated a set of external services, tools and resources exhibiting high heterogeneity. The initial technical requirements mandated by the JISC Distributed e-Learning programme were that the L4All functionality would be provided, as much as possible, by existing e-tools and services compliant with the JISC E-Learning Framework and service-oriented architecture\(^3\).

The L4All system consists of a set of components and services that form a two-part architecture comprised of: (a) the backend and (b) the user interface (see Figure 1). The user interface comprises two parts: a Web portal that serves as a platform for the user interaction components to be built upon, and a Flash application that interacts with the backend and presents to the user the L4All functionality relating to the creation of personal timelines, searching the available courses metadata, searching for other users and other timelines, and obtaining recommendations regarding future learning. The backend connects with RDF repositories for storing, retrieving and modifying metadata describing users, courses and timelines. It also calls three external services: the DELTA metadata search service\(^4\), the ISIS sequencing service\(^5\) and a service for search and retrieving information about courses in the UfI LearnDirect database\(^6\).

Evaluation of L4All

The main project outcome has been the development of the L4All pilot system. A Web Portal has been developed that allows learners to access information and resources registered with the portal by their providers, to plan their own learning pathways, and to maintain and reflect on their individual record their learning throughout life. Tutors are able to publish recommended pathways through courses and modules in the London region. The L4All system allows learners to share their learning plans and pathways with other learners (if they wish) in order to encourage collaborative learning and collaborative for-

\(^{1}\) L4All site: http://www.lkl.ac.uk/research/l4all.html
\(^{2}\) http://www.jisc.ac.uk/programme_edistributed.html
\(^{3}\) http://www.jisc.ac.uk/index.cfm?name=elearning_framework
\(^{4}\) www.essex.ac.uk/chimera/delta/index.html
\(^{5}\) www.hull.ac.uk/esig/isis.html
\(^{6}\) www.learndirect.co.uk
mulation of future learning goals and aspirations.

The main preliminary finding of the evaluation has been the overall endorsement of the L4All pilot system. The evaluation study has also identified areas for further technical refinement and development that are required in the coming months e.g. differentiating the needs of different learner groups and developing strategies for differentiated interaction with the system; extension with e-portfolio and online journal capabilities; and extension with a ‘live chat’ facility.

The high heterogeneity of the different services that had to be integrated made developing the L4All pilot a challenging task. In order to achieve the full L4All requirements it was sometimes necessary to extend an external service in order to cover the full L4All requirements (in the case of DELTA) or to write mapping code in order to translate metadata between the L4All system and that supported by an external service (in the case of ISIS). In the case of the visual front end it was technically not feasible to integrate an existing service as was originally planned – a custom-built L4All extension had to be developed to provide the functionality missing from existing services.

References


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(Based on de Freitas et al., 2006 - [2] and [3])

Figure 1: L4All version 2 architecture