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## eLearning Papers



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### eLearning Papers



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## Editorial: Personal learning environments

Today's learning management systems can be perceived as islands - islands in the vast sea of learning possibilities the World Wide Web offers. Not only content can be obtained, refined and selected; learners can also adopt those tools which are important for their purposes, create their own and individual learning portals, tag content or register RSS feeds informing about news relevant to them.

The keyword web 2.0 makes it possible: Moving away from standard learning management systems ("one for all" technique) to Personalised Learning Environments ("one for me" technique) consisting of snips, bits and pieces, collections of tools and services which are bundled to individual and/ or shared landscapes of knowledge, experiences and contacts. It is a shift from the island paradigm of the LMS technique to understanding the web as a door, a portal to learning opportunities.

While we have already claimed individualisation of education through e-learning in the past, Personalised Learning Environments (PLE) are now truly offering it.

The eLearning Papers offers in this issue a selection of articles about Personalised Learning Environments.

How do schools successfully support the personalising of learning through the use of digital technologies? This question is addressed in Philip Banyard's and Jean Underwood's article, which explores the relationship between digital technologies and current moves to provide a more personalised learning experience.

Sandra Schaffert and Wolf Hilzensauer present seven crucial aspects of personal learning environments derived from the consequences and challenges of PLEs and their rising usage. These aspects may serve as the basis for learners, teachers and educational institutions decisions for (or against) the technological concept of PLE, on a general level and taking into account its pedagogical implications.

A critical view on the contemporary models for personalised adaptive learning is offered in the article from Fridolin Wild, Felix Mödritscher and Steinn Sigurdarson. They state that a proposed alternative, mash-up personal learning environment, can provide better adaptation mechanisms for learning environment construction and maintenance.

The article of Laura Gonella and Eleonora Pantò can help to understand whether "eLearning 2.0", eLearning based on the tools and approaches typical of web 2.0, can be useful in different frameworks and organisations. The authors present four different organizational models and the corresponding evolution of didactic architectures.

The iClass project has been designed as an innovative system adapted to the needs of individuals. Two different articles describe the project to our readers: the first one reviews the development process of the pedagogical vision and model during the project; the second one analyzes how self-regulated learning processes can be supported with the help of PLEs.

Enjoy reading these articles!

**Roberto Carneiro, Director, eLearning Papers  
Ulf-Daniel Ehlers, University of Duisburg-Essen;  
European Foundation for Quality in E-Learning**



Philip Banyard



Jean Underwood

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“ We identify four key spaces (personal learning space, teaching space, school space and living space) that have an impact on the educational experience of learners. ”

#### Keywords

Digital literacy, Learning spaces, Learning, Pedagogy, Research, School, Teacher

#### Full text

<http://www.elearningeuropa.info/files/media/media15970.pdf>

## Understanding the learning space

How do schools successfully support the personalising of learning through the use of digital technologies? The research reported here explores the relationship between digital technologies and current moves to provide a more personalised learning experience. Recommendations are made that will encourage a better understanding of the learning spaces and the better use of digital technologies.

We start by presenting a descriptive model of the relationship between learners, the educational spaces they operate in and digital technologies. We identify four key spaces (personal learning space, teaching space, school space and living space) that have an impact on the educational experience of learners. These spaces are currently not well understood and as a result much of the informal and formal learning of children is not acknowledged and not assessed.

We then test the validity of this model using evidence from several national research projects all of which used a mixed-method design collecting qualitative and quantitative data through focus groups, interviews, surveys and national data sets of learner performance. The data reported here comes from the case study reports and includes classroom observations along with first hand comments from teachers, managers and learners. We consider the implications of these data and this model for our understanding of how digital technologies can be used effectively in education.

In the traditional model of education the design of the learning space was mainly under the control of the institution and the teacher. The physical characteristics of the personal learning space can still be influenced by teachers and institutions, but the design of that space and the uses of the technology are under the control of the learners. To create effective learning it is necessary to understand the different spaces in the personalising of learning and to respond to the perceptions and behaviours of learners.



Sandra  
Schaffert



Wolf  
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“ The vast number of tools, supporting collaboration on the web is an indicator that PLE and social software tools are not only a flash in the pan, but lead to a new notion of learning and a measure for sustainable competence development. ”

#### Keywords

Virtual Learning System, Learning Management System (LMS), Personal Learning Environment (PLE), Social Software

#### Full text

<http://www.elearningeuropa.info/files/media/media15971.pdf>

## On the way towards Personal Learning Environments: Seven crucial aspects

The practice of learning and teaching is not pre-determined, but always related to the tools and systems used in the process. The development and rising success of social software applications such as weblogs and wikis and so-called Personal Learning Environments (PLE) changes, enables and challenges learning with the Internet.

PLE, especially in contrast to traditional Learning Management Systems (LMS), received significant attention and are about changing the paradigm of learning and teaching. This paper tries to underpin a better understanding of the underlying concepts of both approaches and, on the other hand, to emphasise the consequences and challenges of PLE and its rising usage for learning.

We have identified seven aspects where these changes are most obvious and/or important. To sum up, learning with PLE leads to changes concerning: (1) the role of the learner as active, self-directed creators of content; (2) personalisation with the support and data of community members; (3) learning content as an infinite “bazaar”; (4) the big role of social involvement; (5) the ownership of learner's data; (6) the meaning of self-organised learning for the culture of educational institutions and organisations, and (7) technological aspects of using social software tools and aggregation of multiple sources.

The vast number of tools, supporting collaboration on the web is an indicator that PLE and social software tools are not only a flash in the pan, but lead to a new notion of learning and a measure for sustainable competence development. Nevertheless, the existing approaches and ideas for PLE need further development and elaboration. With the discussion of the related shifts from LMS towards PLE and their challenges, this paper may serve as the basis for learners, teachers and educational institutions decisions for (or against) the technological concept of PLE, on a general level and taking into account its pedagogical implications.



Fridolin Wild



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Mödritscher



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“ The web application  
mash-up solution allows  
learners to reuse existing  
(web-based) tools plus  
services. ”

#### Keywords

Personalised Learning,  
Environments, Design, LISL,  
MUPPLE approach

#### Full text

[http://www.elearningeuropa.info/  
files/media/media15972.pdf](http://www.elearningeuropa.info/files/media/media15972.pdf)

## Designing for Change: Mash-Up Personal Learning Environments

Institutions for formal education and most work places are equipped today with at least some kind of tools that bring together people and content artefacts in learning activities to support them in constructing and processing information and knowledge. For almost half a century, science and practice have been discussing models on how to bring personalisation through digital means to these environments.

Learning environments and their construction as well as maintenance makes up the most crucial part of the learning process and the desired learning outcomes and theories should take this into account. Instruction itself as the predominant paradigm has to step down.

The learning environment is an (if not ‘the’) important outcome of a learning process, not just a stage to perform a ‘learning play’. For these good reasons, we therefore consider instructional design theories to be flawed.

In this article we first clarify key concepts and assumptions for personalised learning environments. Afterwards, we summarise our critique on the contemporary models for personalised adaptive learning. Subsequently, we propose our alternative, i.e. the concept of a mash-up personal learning environment that provides adaptation mechanisms for learning environment construction and maintenance. The web application mash-up solution allows learners to reuse existing (web-based) tools plus services.

Our alternative, LISL is a design language model for creating, managing, maintaining, and learning about learning environment design; it is complemented by a proof of concept, the MUPPLE platform. We demonstrate this approach with a prototypical implementation and a - we think - comprehensible example. Finally, we round up the article with a discussion on possible extensions of this new model and open problems.



Laura Gonella



Eleonora Pantò

CSP- ICT Innovation -  
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“ In a knowledge society where time to market is fast and competence domains are widened and in rapid evolution, organizations are forced to move towards the so called enterprise 2.0 model, characterized by an intensive use of blogs, wikis, social bookmarking and RSS. ”

#### Keywords

Informal learning, Training, LMS (Learning Management System), Pedagogy, PLE (Personal Learning Environment), eLearning 2.0., didactic architectures, online education, learning platforms

#### Full text

<http://www.elearningeuropa.info/files/media/media15973.pdf>

## Didactic architectures and organization models: a process of mutual adaptation

This article aims to establish a parallel between the organizational models and the didactic architectures used by businesses to manage internal training. The objective is to understand whether so-called "eLearning 2.0" (eLearning based on the tools and approaches typical of web 2.0) can be useful in different frameworks and organisations. In this context, the paper looks at whether it is possible to identify a mutual process of adaptation among the organizational and training models we term didactic architectures.

During the analysis, four different organizational models are introduced (industrial society, post-industrial society, enterprise 1.0 and enterprise 2.0), and the corresponding evolution of didactic architectures is suggested (web based training, eLearning 1.0, online education, eLearning 2.0).

In a knowledge society where time to market is fast and competence domains are widened and in rapid evolution, organizations are forced to move towards the so called enterprise 2.0 model, characterized by an intensive use of blogs, wikis, social bookmarking and RSS. These organizations have a flat structure and are based on the principle of autonomy. This article asserts that in these contexts, training and vocational systems based on the same principles - namely autonomy, informal style and an open approach - can be implemented. In other more traditional frameworks, formal eLearning based on LMS platforms will continue to represent an effective solution: as long as users do not become familiar with the functionalities offered by 2.0 technologies and thus become actors of change.

The document is structured in three parts: The first chapter analyses four different didactic architectures, highlighting the differences between eLearning 1.0 and eLearning 2.0; the second chapter describes organizational models and introduces the relation with the didactic architectures, and the third chapter highlights the process of mutual adaptation between didactic architectures and organization models.



Aharon Aviram



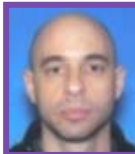
Yael Ronen



Smadar Somekh



Amir Winer



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Ben-Gurion University in the  
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“ In today’s global economy and labor market scenario, iClass emphasizes the importance of personalized learning to reach Europe’s educational goals (as stated in the Lisbon’s Objective of 2000), as well as for personal well-being. ”

#### Keywords

SRPL, learning platform,  
personalised learning,  
reflective learners

#### Full text

[http://www.elearningeuropa.info/  
files/media/media15974.pdf](http://www.elearningeuropa.info/files/media/media15974.pdf)

## Self-Regulated Personalized Learning (SRPL): Developing iClass’s pedagogical model

This article reviews the development process of the pedagogical vision and model of iClass, a self-regulated personalized learning project (SRPL) aimed at developing an innovative system adapted to the needs of individuals. The conceptual methodology that guided this process is unique in its attempt to structure the development for attaining coherent pedagogical results.

The iClass model has been developed as a direct response and corrective to the changing needs of both educators and students in this postmodern/ digital era. In today’s global economy and labor market scenario, iClass emphasizes the importance of personalized learning to reach Europe’s educational goals (as stated in the Lisbon’s Objective of 2000), as well as for personal well-being.

Among the basic questions confronting the development of iClass, the model we present underscores the importance of issues such as the decline of rational, strategic and mindful thought processes. It also insists on the need for developing self-regulated reflective learners who are able to make informed choices and plan their learning process according to their own needs, interests and preferences.

By developing adequate tracking, profiling and matching capabilities, ICT can materialize the dream of several generations of educators and thinkers. In this paper we argue that the development of a system geared towards the personalization of learning must be accompanied by the development of a set of pedagogical methodologies on three levels. However, since the realization of the SRPL goals in European schools depends to a large extent on the usability of the pedagogical methodologies, the major effort for future development based on SRPL will have to focus on refining and further operationalizing them based on the evaluation of pilot experiments with teachers in schools.



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“ Without a pedagogical value-add, PLEs cannot be viewed as educational tools, but perhaps advanced, user-friendly file management tools. ”

#### Keywords

PLE, Learning Theories, Self-Regulated Learning, Visual Interfaces, Connected Learning, Informal Learning, Attitudes, Design, scaffolding, iClass, RIA, platform

#### Full text

<http://www.elearningeuropa.info/files/media/media15975.pdf>

## Formative Interfaces for Scaffolding Self-Regulated Learning in PLEs

A Personal Learning Environment (PLE) is a software application (desktop or web-based) which allows students to organise learning resources and publish individual outcomes. Although PLEs are built for bottom-up personal use, they involve communication and increasingly social tools, promoting networked learning scenarios. Knowledge management, syndicating resources, trustworthiness and assessment on the assemblage of resources are actual research issues related to the improvement of PLEs.

Without a pedagogical value-add, PLEs cannot be viewed as educational tools, but perhaps advanced, user-friendly file management tools. Therefore, how can such a user-centric tool influence the study process so that meaningful and constructive activities are committed more often than rudimentary informal learning? In other words, how can self-regulation be scaffolded by a PLE? Based on research that points out the role of scaffolding in activating higher order learning competencies it is theorised in this paper that these competencies can be performed even by young users.

iClass is an integrated project which is partially funded by the 6th Framework Programme for Research and Technology Development of the European Commission. Although it started off to develop a user-centric intelligent tutoring platform, the educational vision of the project was updated during the third year and bringing support for self-regulated personalisation on mainstream virtual learning environments became the objective.

In this paper, formative features of the visual interface of the iClass Web-based RIA will be explained as signifiers of typical regulatory structures. Semiotic principles underlying each signification will be described and the role of visualisation in operant conditioning and empowerment will be discussed.